

DIALLING

Performed Instrumentally by our

HEMISPHERE in PLANE;

Projected and first fitted by M^r *William Oughtred*, and laid down according to his Method formerly published for this very subject.

TOGETHER,

With twentie one several *Diagrams* or *Schemes*, demonstratively shewing the reason and ground-work of all Dialling: As also, how to know, distinguish and set down the Hour-lines for both Faces of all Planes at one working.

By a Practitioner in the same Art.



L O N D O N,

Printed by *William Du-Gard*; and are to bee sold by *William Hope*, at the sign of the Anchor, on the North-side of the Roial Exchange. 1652.

1875

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TO THE READER.

WHe I present unto your view a small Tract of Dialling performed by M^r Oughtred's projection of our Hemisphere in Plane, according to his own method in his book formerly published for this very subject, which by often practice & trial I have found so useful and satisfactorie in all cases whatsoever (to this Art belonging) that I have fitted twentie several Diagrams or Schemes for ten several proposed Planes. The greater 10 shewing the drawing & setting down the hour-lines Substyler and Poles height for every of them by the Hemisphere or Instrument it self. The other or lesser 10 shew how to distinguish and set down the hour-lines which are in use for either face of any of these Planes.

In which ensuing discours I assume to my self nothing but the making and fashioning of the Diagrams, and a larger Explanation (demonstratively) of what M^r Oughtred hath in brief set down, wherein I resemble one lighting his Candle at another mans, which as it cannot diminish or take away the luster from his, so I must acknowledg it hath given a light unto mine.

Here is further to be noted, for a great encouragement to the Practitioner, that if hee but barely know the rules of the Globe as *Æquinoctial*, Meridians, Paralels of declination, Poles, &c. Hee shall most plainly see (as in a glass) what the fundamental reason of Dialling

TO the READER.

ing is, neither can bee hoodwinkt (in the use of this Instrument) from the true and full knowledg thereof.

I have likewise for better conveniencie fitted or ordered the Diagrams (to this tract belonging) to bee slicht or bound up by themselves, that so you may laie open before you what Diagram you pleas, by the particular Explanation whereof according to its number in the Book you shall most easily learn the order of working, which I conceiv to bee a readier waie to the learner then to binde them together and so bee forc't to turn from page to page for everie letter. . Lastly these Diagrams or Schemes (beeing made onely for Demonstration-sake) are not so large as to expect every thing to bee exactly performed according to Arithmetical Calculation ; yet I presume no man shall finde such difference from the truth as may make the least sensible error in Time, for had I made them of a greater circumference the work would have been so much the truer.

Which as I have found both useful and satisfactorie to my self, so if it prove but acceptable to thee, I have my desire.

R. L.

A De-



A Definition of certain Terms or VVords
 hereafter used for the better understanding of
 the ensuing Discours.

A Plane.



BY a *Plane* is meant any thing which is flat or smooth, bee it Wall, board, Stone, or any thing elf whereon lines may bee conveniently drawn; which must bee conceived to have length and bredth, but no thicknes; that so when the Sun forsake's the one face or side of any Plane, it must presently appear upon the other: for every Plane hath two faces or sides,

whereon som hour-lines may bee drawn for good use; Except the Horizontal, which can have but one.

Again, everie Plane must cut or divide the Globe of the Univerf into two equal halvs: As the Horizontal Plane divide's the upper Hemisphere which wee see, from the lower which wee see not: Or the Equinoctial Plane may bee said to divide the Northern half of the Globe from the Southern half thereof, or the Meridian Plane; to divide the Eastern half from the Western half thereof: and so do all other Planes whatsoever, according to their several situations.

The Horizontal line.

THE Horizontal line, is a line alwaies level, or paralel to the Horizon; beeing indeed a level-line.

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A Perpendicular line.

A Perpendicular line is a line crossing the Horizontal, or any other line at right angles, but most proper, that line which crosseth the Horizontal at right angles, pointing out the *Zenith* and *Nadir*.

Declination.

THe Declination of a Plane is, what a Plane varie's or differ's from beholding the due North or South, either to the East or Westwards.

Inclination.

THe Inclination of a Plane is the quantitie of an Arch in degrees and minutes which any plane is seated, or lifted up above the level of the Horizontal line.

Pole of the world.

THe Pole of the world is represented in the Instrument by the letter *P*, through which all the Meridians pass.

Pole of the Plane.

THe Pole of the Plane must ever bee 90 : 00 from the Plane it self, even as the Pole of the world is 90 : 00 from the Equator.

Pole of the Meridian of the Plane.

SO must also the Pole of the Meridian of the Plane bee 90 : 00 from the Meridian it self; which will bee far better understood in every of the several Diagrams following.

Meridian or Hour-circle.

BY a Meridian is meant any of the Hour-circles in the Instrument, whereof there are but 12 drawn, thereby pointing out the 24 hours, beeing 15 : 00 each from other, which is an hour of time, and are somtimes termed Meridians, and somtimes Hour-circles, as occasion shall bee given.

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The proper Meridian of the Plane.

THe proper Meridian of the Plane is that very Meridian, either real in the Instrument, or prickt down, which passeth through the Pole of the Plane.

Meridian of the place.

THe Meridian of the Place is that Meridian in this our Horizon, which make's (the Sun beeing thereupon) Mid-daie and Mid-night with us.

The Prime Vertical Circle.

THe Prime Vertical Circle is the Circle or Azumith which passeth through the Zenith and the points of East and West in the Instrument, represented by the line *W z E*.

The Scale.

THe Scale of the Instrument is the Radius or Semidiameter thereof, viz. *z s* beeing divided into 90 : 00 unequal degrees.

The limb of the Instrument.

THe limb of the Instrument is often named, by which you are to understand is meant the innermost Circle of all in the Instrument, which is in every of the Diagrams or Schemes divided into 360 : 00.

An Hour-line.

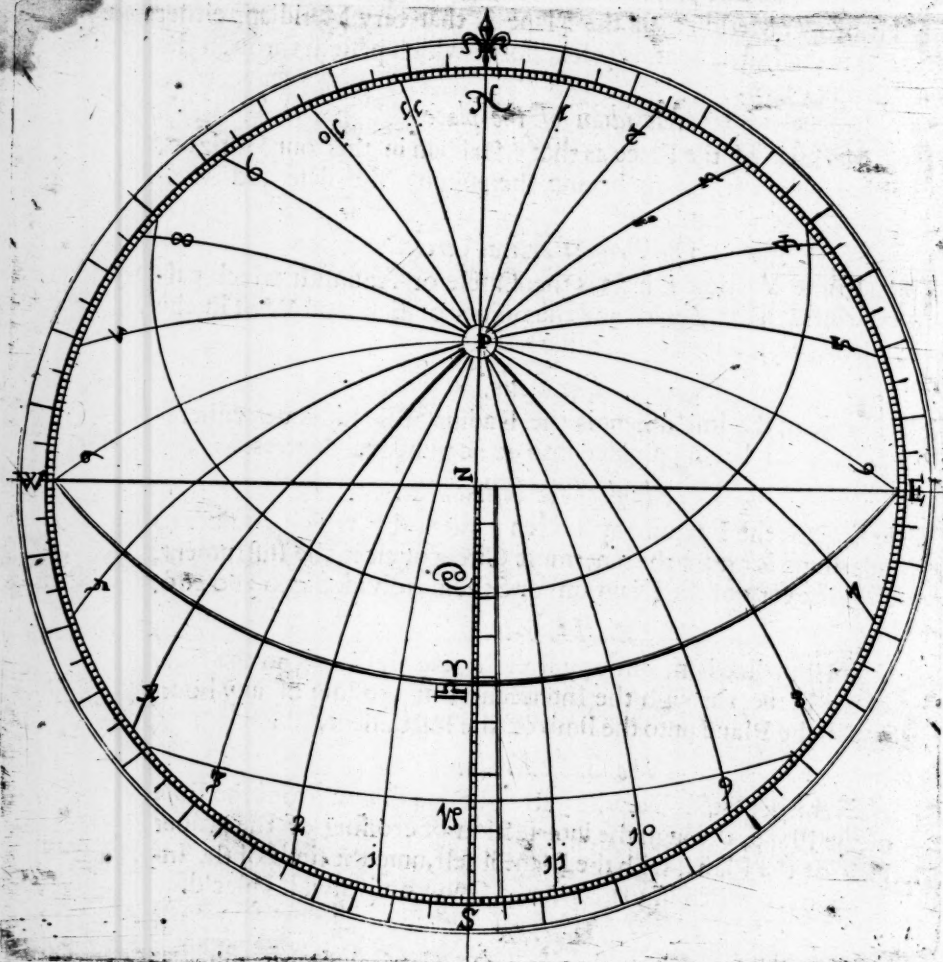
BY an Hour-line is meant any streight line drawn from the Pole of the Plane, through the Intersection or crossing of any hour-circle with the Plane unto the limb of the Instrument.

The Substiler line.

THe Substiler line is likewise a streight line drawn from the Pole of the Plane, through the intersection or crossing of the proper Meridian of the Plane, with the Plane it self, unto the limb of the Instrument, over which line the Stile or Gnomon is alwaies plac'd.

Diagram.

BY the word Diagram is meant a Geometrical figure, whereof for every proposed plane (in the ensuing Tract) there are two of the same number from *n° A* to *n° K*, (both included).



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An explanation of the Instrument.

THis Instrument is our Hemisphere in Plane for the Latitude $51:30$ first projected by M^r William Oughbired, and by him (as also by M^r Gunter) a Method is set down for the making thereof, wherein the Circle

N E S W is the Horizontal Circle of the Plane.

N z S the Meridian, or North and South line.

W z E the Prime Vertical Circle, or East and West line.

z represent's the Zenith, and sometimes the center of the Instrument.

P the Pole of the world.

W v E the Equator.

The Arch *g* represent's the Summer Tropick.

The Arch *w* represent's the Winter Tropick.

z S the Semidiameter is divided into $90:00$ unequal degrees.

Next there are drawn through the Pole in the the Instrumen *P 12* Meridians which divide the whole face of the Plane into 24 parts, which are $15:00$ each from other (beeing an hour of time) therefore they are taken and deemed for hour-circles also, and figured accordingly, which will bee sufficient for our present matter. These several Diagrams following, beeing made onely for demonstration-sake; But the Instrument would bee much more useful and exact if it were larger, and every Meridian, or every 5th Meridian of the $360:00$ were therein drawn, as hereafter will appear.

Further you are to note, that this Instrument is most proper for all dials with centers, in which the hour-lines, substiler and stile do meet, whereof their natures, qualities and number follow:

First, *The Horizontal Plane.*

THe Instrument it self is an Horizontal diall: for if streight lines bee drawn from the center *z* to the several interseptions of the hour-circles with the limb (which represent's the Horizontal Plane) and in *z* erect a Stile or Gnomon $51:30$ above the Plane, equal to *N P* right over the Meridian *z P n* It shall bee a perfect Horizontal Diall.

B

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An upright Plane fully beholding the North or South.

THIs Plane is likewise represented by the line WzE in the Instrument, beeing the Prime Vertical Circle, or East and West line thereof, beeing right to the Meridian NzS , therefore to the Southwards a due South face, and to the Northwards a due North face.

The Vertical Inclining Plane.

ALL Planes which are not level to, or with the Horizon, nor yet perpendicular thereto, but lie sloping betwixt the Zenith and Horizon, are called Inclining Planes: And if their Horizontal lines shall bee parallel to the Prime Vertical WzE , that is, fully beholding the North or South, they are then called Vertical Inclining Planes: These Planes may Incline either to the North-part of the Horizon, or to the South; and each Plane hath two faces whereon som hour-lines may bee drawn for use; The upper face lying open to the Zenith, and the lower to the Nader, wherein you are to consider the height of the Pole above the Plane by comparing the Inclination of the Plane to the Horizon, with the Latitude of the place: and will bee better understood by the demonstration following, wherein AcA represent the Horizontal line.

zcn the Perpendicular line.

Ns the two Poles of the world, whereof N is elevated $51:30$ above A according to our Latitude.

EcE the Equinoctial line or Plane.

The other lines are several Planes proposed according to their several Inclinations to the Horizon.

I will first propose a Plane whose Inclination is $20:00$ in the North part of the Horizon, viz. the line BcB ; now hereby you may plainly perceiv that the North-pole N is elevated above the upper face of this Plane but $31:30$; for if I take the angle of the Plane's Inclination AcB $20:00$ out of AcN $51:30$, there will rest the angle BcN $31:30$ for the North-Pole's height above the upper face, and therefore the South-pole S must bee elevated so much above the lower face of the said Plane as the angle BcS shew's, beeing the same with the angle BcN .

If the Plane proposed were DcD , Northerly likewise, you may perceiv

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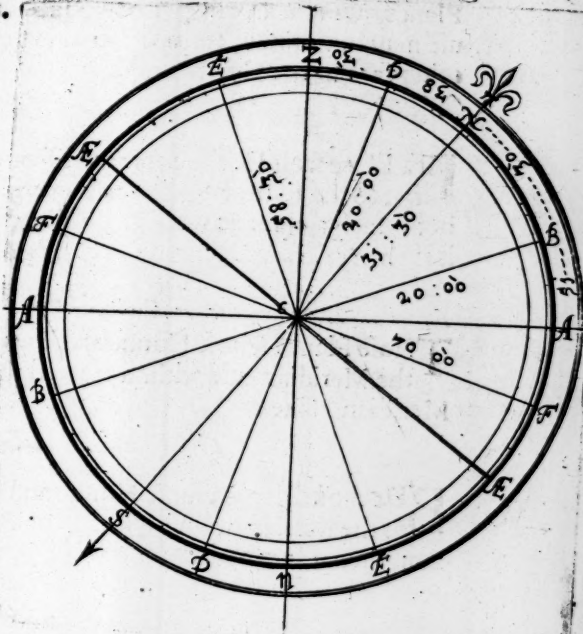
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perceiv by the situation of the Plane that the North-pole *N* will bee elevated above the lower face of this plane $20:00$, for if I take the angle $A\hat{c}N$ $51:30$ out of $A\hat{c}D$ $71:30$ there will rest the angle $N\hat{c}D$ $20:00$ for the North-pole's height above the lower face, and and therefore so much for the South-pole above the upper face thereof as the angle $D\hat{c}S$ shew's.

Again, if the Plane proposed were $F\hat{c}F$ $18:30$ Inclination in the Southern part of the Horizon. Here, because *F* in the South-part of the Horizon is lifted up above the Horizontal line $18:30$ according to the Inclination thereof, therefore *F* beeing the other end of the Plane, must bee so much depressed under it, so that if I add the angle $A\hat{c}F$ $18:30$ to the angle $A\hat{c}N$ $51:30$, I shall have the angle $F\hat{c}N$ $70:00$ for the North-pole's height above the upper face, and so much must the South-pole's height bee above the lower face of this Plane, as the angles $F\hat{c}N$ and $F\hat{c}S$ shew.

If the Plane proposed were the line $N\hat{c}S$, it must of necessitie bee a Polar Plane, because it is the same with the Axis of the world, so that neither Pole will bee elevated above this Plane.

If the Plane proposed were the line $\hat{A}c\hat{A}$ it must needs bee an Equinoctial Plane, and so the Poles will bee elevated $90:00$ above either face of the said Plane.



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The upright declining Plane.

THese Planes, becauf they do not directly behold the South or North, nor yet the East or West fully, but are Planes which lie betwixt both, (and upright withall) are called upright declining Planes, which have likewise two faces whereon som hour-lines for use may bee drawn, the one face lying open to the Southwards, the other face to the Northwards.

The Declining Inclining Plane.

IF a Plane shall Decline anie waie from the due North or South either to the East or Westwards, and is not withall an upright plane, but is such a plane as with its Declination inclineth to the Horizon, it is then called a Declining Inclining Plane.

The Meridian Plane.

THose Planes whose Horizontal lines are the same, or parallel to the Meridian, and withall are upright Planes, are generally called Meridian Planes.

The Meridian Inclining Plane.

BUt those Planes whose Horizontal lines are the same, or parallel to the Meridian, and withall the Plane shall Incline to the Horizon, then it is called a Meridian Inclining Plane.

The Polar Plane.

THose Planes wherein a line may bee drawn paralel to the Axis of the world are called Polar Planes (although with som distinction) becauf that line pointeth unto the two Poles; and these Planes are alwaies paralel to som one of the hour-circles in the Instrument; For the direct Polar Plane is paralel to the hour-circle of 6, and the Meridian plane is paralel to the hour-circle of 12.

The Polar declining Plane.

BUt the Polar declining Plane is a Plane which is paralel to som one of the hour-circles in the Instrument betwixt 12 and 6, becauf of its Inclination to the Pole, and Declination from the
prime

prime Vertical, or, East and West line in the Instrument.

Next the Substiler and hour-lines in a Meridian Plane make an Arch with the Horizontal line of the plane, equal to the Latitude of the place: In direct Polar planes they make an Arch of $90:00$, but in Polar declining planes they make an Arch with their Horizontal line of their planes more then the latitude of the place, and less then $90:00$.

Again, in direct Polar planes the Substiler line is the same with the Meridian or 12 a clock line: In a Meridian plane it is the same with the hour of 6, but in a Polar declining plane it is betwixt 12 and 6, according to the inclination or distance of the proper Meridian of the plane with or from the Meridian of the place.

I should now proceed to the setting down those several planes upon the Instrument in their order; but because some of them are plain regular dials, falling under every man's apprehension, and some comprehended in what shall be spoken of the others, I will omit these several following.

The first therefore which I shall omit or pass over, is the Horizontal plane, whereof the Instrument itself is a perfect pattern, as in *folio 5* is declared.

The next following is the due South and North plane, which is likewise represented in the Instrument by the line *WzE*, and is fully comprehended and taught in any of the Diagrams *n° AB* or *C*, of the upright declining planes.

The next following is the Vertical inclining plane, which is likewise sufficiently explained in any of the Diagrams of number *DEF G*, of the declining inclining planes, there being but the same method and order of working for the one as for the other.

The last which I pass over are the direct Polar and Equinoctial planes, being very plain regular Dials, and indeed, not so proper for the Instrument as aforesaid.

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How to set down upon the Instrument these several Planes following, *viz.*

First, *The upright declining Plane.*

THe first therefore which I will begin withall is, how to set down upon the Instrument any upright, or upright declining Plane: First you must bee very careful which waie your declination tend's; for if you mistake herein, your work must bee extreme fals.

This upright declining Plane is proposed to decline 30: 00 to the Eastwards of the South; therefore I reckon in the limb of the Instrument 30: 00 to the Northwards of *E*, and 30: 00 to the Southwards of *W*, in the greater Diagram, number *A*, and so draw the line *AzA* for the Horizontal line of the Plane. Next I cross it at right angles with the line *CzE* for the perpendicular line thereof; for you must know that the Horizontal line of the Plane, and the Perpendicular line thereto, in all upright planes must bee the two first lines: and in all incliners the Horizontal line must bee the first, and a line crossing the Horizontal at right angles must bee the second (which upon the matter is all one) before you can proceed any further.

This beeing don, you perceiv the Southern face of this plane to behold the South-east quarter of the Instrument, and the Northern face thereof to behold the North-west quarter of the Instrument, which is according to the declination proposed.

How to set upon the Instrument any Vertical Incliner, or any Declining Inclining Plane.

FOR all sorts of Incliners you must have recourse unto the Semidiameter or graduated scale in the Instrument *z S*.

Now this Plane \int Decline 24: 20 Westerly from *S*.
is proposed to \int Incline 36: 00 Northerly.

First, becaus this plane decline's to the Southwestwarde, therefore in the greater Diagram number *D* I reckon from *W* in the limb 24: 20 Northerly, and so much from *E* Southerly, and so I draw the Horizontal line of the Plane *AzA*, which I cross at right angles with the line *BzB*.

Next,

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Next, I consider the Inclination proposed 36:00 northerlie, which I take out of the Scale from *S* to *e* and put it over in the northern part of the line *BzB* from *B* to *T*, or, (which is much the better waie) I take the complement to 36:00 beeing 54:00 out of the Scale from *z* to *e* and put it over in the Northern part of the line from *z* to *T*, becaus the Inclination proposed is northerlie, of which you must have asmuch care as to the Declination, which point *T* will bee the highest point in this plane, beeing nearest the Zenith *z*. Now from the two ends of the Horizontal line *A* and *A*, and through this point *T*; having found a center, I draw the Arch of a circle *ATA*, which Arch is the Declining Inclining plane proposed: And these two foregoing examples will bee sufficient for setting down or placing upon the Instrument all Planes whatsoever.

To finde the place of the Pole of every upright Plane.

NOW after your Plane is justly set upon your Instrument with its horizontal and perpendicular lines, the next thing requisite to know, is the place of the Pole of your Plane, which must bee carefully placed; for from the Pole of every Plane (having a center) the Substyler and all the hour-lines must be drawn to the limb of the Instrument.

You are likewise to know, that the Pole of every Plane is alwaies 90:00 from the Plane it self, and ever, in all upright planes, at that end of the perpendicular line in the limb of the Instrument, to which the face of your Plane is opposite, for which you intend your Diall, becaus it is the Semidiameter, and therefore the Radius or Sine of 90:00 which is general.

Thus in the greater Diagram *n° A* the Southeasterlie face of the plane being proposed, therefore at the Southern end of the perpendicular line, viz. at *C* in the limb is the place of the Pole of that face of the plane. If the Northwesterlie face (which is the contrarie face) were intended for principal, then the Pole thereof would bee at *E* in the Northern end thereof.

Tt

The Art of Dialling.

To finde the place of the Pole of every Inclining, or of every Declining Inclining Plane.

IF the Plane bee a Vertical Incliner, or a Declining inclining Plane, as in the greater Diagram *n° D* is proposed, then the Pole of the Plane must bee alwaies in the line which crosseth the Horizontal at right angles, betwixt the limb and the center *z*, so that you know *zT* beeing the complement of Inclination $54:00$ if I take $36:00$ out of the Scale from *z* downwards, it will extend to *d*, which beeing put over in the same line *BzB* from *z*, it will reach unto *m*, which must bee the place of the Pole of this Plane, becauf *zT* is $54:00$ of the Scale from *z*, and *zm* is $36:00$ from *z*, which make's the line *Tzm* to bee $90:00$ betwixt the Plane at *T*, and the Pole thereof at *m*; and this is general for all Planes of this nature.

To draw the Hour-lines upon all Planes with Centers.

YOU are to mark diligently where the Hour-circles in the Instrument do cross or cut your Plane; for if a streight Ruler bee laid to the Pole of the Plane, and to those several interfections or crossings of the Hour-circles, with the Plane and streight lines drawn from those several interfections or crossings to the limb of the Instrument, those streight lines shall bee the Hour-lines for your Plane, and by reckoning the degrees in the limb of the Instrument you shall know, how much every hour-line is distant either from the Horizontal line of the Plane, or from the Perpendicular line thereof, or from the Substiler, or any one hour-line from another; by which you may transfer the same lines upon your Plane by a table made thereby as you pleas.

To draw the Substiler line upon all Planes with Centers.

YOU are to mark diligently where the Pole of your Plane fall's to bee either upon an hour-circle, or meridian, or betwixt any two; for if the Pole of the Plane fall upon a Meridian, as in the Diagram number *D* it doth fall just upon the Meridian or hour-circles of one
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in the point *m*, then this hour-circle of one must bee the proper Meridian of the Plane, becaus it passeth through the Pole of the Plane at *m*. Now if you laie a ruler to the Pole of the Plane *m*, and to the intersecion or crossing of this Meridian with the plane it self, in the point *L*, and draw the streight line *m L K* to the limb of the Instrument, this line shall bee the Substiler line.

Furthermore, becaus the proper Meridian of the Plane, and the hour-circle of one, in this Diagram *n° D*, bee one and the same, therefore the Substiler and hour-line of one, must bee one and the same line also, and serve for both.

But if the Pole of the Plane fall betwixt two meridians or hour-circles in the Instrument, as in the Diagram *n° A* it doth, *viz.* betwixt the hour circles of 9 and 10 in the Instrument, at the point *C*: in the limb (becaus it is an upright Plane) then for better demonstration sake, I will in the Diagrams following, (where need shall require) make or prick one down, which in this Diagram *n° A* is *C L P E*, which is the proper meridian of this Plane, becaus it passeth through *C* the Pole thereof. Now laying a ruler to the Pole *C*, and to the Intersecion of this proper meridian with the Plane it self in the point *L*, and draw the line *C L K*, it must bee the Substiler line for this Plane.

To finde the height of the Pole above all Planes having Centers.

THE next and last thing to know, is, how much the Pole is elevated above your Plane: Now the height of the Pole above any Plane, is the measure of the arch of the proper meridian of the Plane, which is intercepted or included betwixt the Pole in the Instrument and the Plane: To know the quantitie of which arch in degrees and minutes, first reckon in the limb of the Instrument, from either end of the proper meridian 90: 00, mark where this account end's, and from thence through the center *z* draw an obscure, or occult line to the opposite point in the limb, then take the distance betwixt the proper meridian and the center *z* in the occult line, and see how many degrees and minutes it is in the Scale from *z* downward; for the complement thereof beeing taken out of the Scale from *z*, and extended in the occult line on the other side the center, shall point out the

the pole of this proper meridian, which had, laie a ruler to the Pole of this proper meridian, and to the Pole in the Instrument *P*, and make a mark in the limb where the ruler cut's. Again lay the ruler to the Poles of the proper meridian, and to the intersection or crossing of this meridian with the Plane, and make a second mark in the limb where the ruler cut's; for the degrees and minutes reckoned in the limb betwixt these two marks, will bee the exact measure of the arch of the proper meridian of the plane, which is intercepted or included betwixt the Pole and the Plane, which is the height of the Pole above all planes having centers.

Thus in the Diagram *n° A*, from either end of the proper meridian of the Plane, *viz.* from *E* or *C* in the limb, I reckon 90:00 which end's at *A* or *A*, beeing in this Diagram the ends of the horizontal line, and therefore the same line *AzA* serv's for the occult line before spoken of (and will bee alwaies so in all upright planes). Next I finde the distance betwixt the proper meridian and the center *z*, *viz.* *zL* to bee in the Scale 21:00; so that taking 69:00 the complement thereof out of the Scale from *z* downwards, and extending it in the occult line on the other side the center, it will point out the place of the Pole of this proper meridian to bee at *h*.

Now laying a ruler to the Pole of this proper meridian at *h*, and to the Pole in the Instrument *P* make a mark in the limb where the ruler cut's, *viz.* *n*; or (which is all one) draw the obscure line *hPn*; then keeping the ruler at *h*, turn it to the point *L*, where the proper Meridian cut's the Plane, and make the mark *o* in the limb, or the line *hLo*, and you shall finde the degrees and minutes betwixt *n* and *o* in the limb to bee 32:40, which is the measure of the arch of the proper meridian betwixt *P* and *L*, which is the North-pole's height above the Northern face of the Plane, and therefore the South-pole must bee elevated so much above the Southern face thereof.

Again, in the Diagram *n° D*, the proper meridian of the Plane which passeth through the Pole of the Plane, is the meridian or hour-circle of one, *viz.* *qmiLq*: from *q* therefore, either end of this hour-circle, which is (now the proper meridian of the Plane) I reckon 90:00 in the limb, which end's at *D*, from which point *D* through the center *z* I draw the occult line *DzD*; Next I finde the distance betwixt the center *z* and the proper meridian in the obscure line

line to bee $z\ 9:00$ of the Scale, therefore taking the complement thereof $81:00$ out of the Scale from z downwards, it will extend on the other side the center, in the occult line from z to h , which will bee the place of the Pole of this proper meridian; now laying a ruler to h the Pole of the proper meridian, and to P the Pole in the Instrument, draw the obscure line hPn , then laying the ruler to h , and to the point L , where the proper meridian crosseth the Plane, and draw the line hLo , and you shall finde the degrees and minutes betwixt n and o in the limb to bee $17:00$, which is the measure of the arch of the proper meridian betwixt P and L , which is the North-pole's height above the upper face of this declining inclining Plane, and therefore the South-pole must bee elevated so much above the lower face thereof.

To place the Stile or Gnomon.

NOW the height of the Pole above the Plane beeing found for right placing the Stile or Gnomon you must know it must ever point directly to the pole, which is elevated above that face of your plane for which you intend your Diall.

To know what hour-lines must bee in use for either face of any Plane whatsoever.

BECAUSE you shall not incumber nor pester your Diall with useles or unnecessarie hour-lines, you shall most plainly perceiv, after your Plane is truly plac'd upon your Instrument, what hour-lines will bee in use for either face thereof, onely by observing the intersections, or crossings of the Tropiques and Parallels of the Sun's Declination with the Plane, which is very plain and of excellent use.

For example in the Diagram $n^o\ A$ you perceiv the Southern face of the Plane to be ACA in the Instrument, and the Northern face thereof to be AEA ; now imagining the Sun's diurnal arch to bee in the Summer Tropique, you may perceiv that from its rising, which is about $\frac{1}{4}$ before 4 till it com to the point d , where the Tropique crosseth the plane; it will shine upon the Northern face thereof, which is until about 40 past 4 in the morn, from this point d : it immedi-

arely appear's upon the Southern face thereof, and so continue's till the same Tropique cut's the Plane again in the point *c*, which you see will bee amongst the hour-circles about $\frac{1}{2}$ an hour past 2, and then forsaking the Southern face, it appear's again upon the Northern face, and so continue's till Sun-set, which is about $\frac{1}{2}$ past 8 in the Evening.

So that for the Northern face, the hour-lines in use will bee first 4 in the morn, and then from 3 to 8, (both included); And for the Southern face, all the hour-lines from 5 in the morn, to 4 afternoon, (both included); becaus you see that when the Sun is in the parallel of 20:00 South Declination, the Sun will shine upon that Southern face from its rising till its setting, beeing about a little past 4 afternoon, becaus that parallel 8, 20, 4, crosseth not the plane at all.

Again, in Diagram *n° D*, the Sun beeing in the Summer Tropique, it will shine upon the Northern or lower face of that plane, from its rising to the crossing of that Tropique; with the Plane in the point *a*, which is about 25 past 6 in the morn, from thence in the same moment of time, it will appear upon the Southern or upper face thereof, and continue's thereupon till it cross the Plane again in the point *b*, which is about 30 past 7 in in the Evening, and then departing from that face, shine's upon the Northern face of the said Plane till Sun-set; But when the Sun is in 10:00 South Declination, *viz.* the parallel *g, i, 10, f*, it will shine upon the Northern face from its rising at *g*, which is a little before 7 in the morn, till it cross the Plane in the point *i*, which is about $\frac{1}{2}$ past 7 in the morn; So that for the Northern, or lower face of the Plane; the hour-lines in use will bee from 4 to 7 in the morn, (both included) and onely 8 in the evening; and for the Southern or upper face, all the hour-lines from 7 in the morn to 7 at evening, both included.

Further you must know, that by the Instrument you shall alwaies have 12 of the 24 hour-lines pointed out unto you by the intersections or crossings of the hour-circles with the Plane.

It will fall out in all Southerlie Inclining, or in Southerlie Inclining Declining Planes, that although the Northern face of a Plane bee the face proposed to finde out the hour-lines and Substiler for, yet in these planes the hour-lines will bee drawn in and by the Instrument; for the lower or Southerlie face thereof, which is the contrarie

contrarie face to the intended, which you shall fully understand in the Diagrams *N^o E & G*, following.

You are to note, that the Tables following for every Diagram, are the several distances in degrees and minutes taken out of the limb of the Instrument, which the Substiler and hour-lines are distant from the Perpendicular line of the plane in all upright Planes, and in all Incliners, from the line crossing the Horizontal at right angles, (which upon the matter is all one line).

Except the two Polar Declining Planes, whose hour-lines in the Tables take their several distances from the Substiler lines.

Lastly, in the 10 lesser Diagrams you have three whole circles, or rundles, in each whereof the greater (which represent's the Plane) is divided into 24 hour-lines by the Instrument, in which you have two scroles, whereof the outermost is the Diall for the face proposed, and in the innermost scrole are contained the hour-lines which are in use for the contrarie face; and the two lesser circles or rundles are the Dialls for both faces of the proposed planes, whereof, in all Inclining planes, the rundle *N^o V* is for the upper, and the rundle *N^o L* stand's for the lower face of any of them.



Here followeth a particular Explanation of the
several Diagrams following, *viz.*

Diagrams N^o A & A.

Being the first example of an Upright Declining Plane, proposed to decline 30 : 00 Easterlie from South.

According to what hath been formerly taught I draw the line

A z A for the Horizontal } lines of this Plane.

C z E for the Perpendicular }

C the Pole of the Plane becaus a Southerlie face is proposed.

C L P E the proper Meridian of the Plane.

L the point of this Meridian's cutting or crossing the Plane.

C L K the Substiler line of this Plane.

A z A serv's for the occult line, beeing 90 : 00 from *C* or *E*.

z L 21 : 00 the Meridian's distance from *z* in the occult line.

z h 69 : 00 the Pole of this proper Meridian at *b*.

no in the limb, beeing the measure of the arch of this proper Meridian, betwixt *P* and *L* is 32 : 40.

The Pole's height above this Plane 32 : 40.

The hour-lines which are in use for the Northerlie face of this Plane, are four in the morn, and all the hour-lines from 3 to 8 (both included).

And for the Southern face thereof, all the hour-lines from 5 in the morn to 4 afternoon, both included.

Here in this Diagram *n^o A*, becaus the South-easterly face of the Plane is the face proposed to make a Diall for, therefore the hour-lines and substiler, as they are drawn in the semicircle of the Instrument *A E A* shall bee the perfect Diall, (without alteration) to bee transferred upon the Southern face thereof, which may easily bee don by making a Table out of the limb of the Instrument of the several distances of the hour-lines and substiler from the Perpendicular line of the Plane. Thus you shall finde

The

The Table.

The hour of—	5:75:00	—	11:10:30
	6:57:20	—	12 Perpendicular
	7:45:00	—	1:13:20
	8:34:00	—	2:29:45
	9:26:00	—	3:51:30
Substiler line—	22:20	—	4:79:40
	10:18:00		

Now if you would know how to set off the hour-lines which are in use for the North-westerly face, which is the back or contrarie face to the proposed upon that face of your Plane, which hour lines really by the Instrument you have not.

Sweep a circle as I have don in the lesser Diagram of this *n° A*, viz. *ABAE*, and set therein by help of the Table above, all the hour-lines from 5 in morn, to 4 afternoon, both included; in the lower semicircle *AEA* just as they lie in the Instrument, which will bee the perfect Diall for the South-easterlie face proposed.

Now if you continue these 12 hour-lines through the center to their opposite quadrants in the upper semicircle *ABA*, you shall divide the whole circle into 24 hours, that so you may take thereout the hour-lines which are in use for the Northwesterlie face. As I have don and distinguished by the two Scroles; whereof the greater or outermost Scrole is the Diall for the face proposed, and in the lesser Scrole are the hour-lines for the contrarie face of the same Plane.

And when you pleas to transfer these hour lines in the lesser scrole which are for the contrarie face, upon that face of your Plane, you must place them contrarie to what they are in the lesser scrole, becauf they are the hour-lines for the contrarie face to the proposed, as I have don in the little rundle *n° 2*, beeing the perfect Diall for the Northwesterlie, or contrarie face, as the little rundle *n° 1* is the Diall for the proposed.

The better to conceiv a reason hereof, imagin the two little rundles *n° 1 n° 2* were both cut out of the Paper, and their backsides clapt together, their Horizontal and Perpendicular lines agreeing aright, and center opposite to center, then you will plainly perceive, that the

Sub-

Substiler line Kzm in the rundle number 2 will bee one line with the Substiler line Lzn in the rundle n° 1.

As also the hour-lines will meet, and make one line with each hour-line of its opposite quadrant, and this is general for all Planes whatsoever.

An explanation of the Diagrams N° B & B.

THe second example of an Upright Declining Plane proposed to decline 63, 00 Westerly from South.

Here you have

AzA , the Horizontal } lines of this Plane.
 BzB the perpendicular }

C , the place of the Pole, becauf the Southwesterly face is proposed, beeing in the South west quarter.

CLE , the proper Meridian of the Plane.

L , the point of this Meridians crossing, or cutting the Plane.

C, L, K , the substiler line.

AzA , servs for the occult line, beeing 90, 00, from C , or E .

zL , 36, 00, the Meridian distance from z in the occult line.

zh , 54, 00 the Pole of this proper Meridian at h .

n, o , in the limbe, beeing the measure of the arch of this proper Meridian, betwixt P & L , is 16. 30,

The Poles height above this Plane 16. 30.

The hour-lines in use for the Southwesterly face, are from a little past 10, or indeed from 11 to 8 (both included) becauf 11, is the first perfect, or real hour-line. And for the Northeasterly or contrarie face, all the hour-lines from 4 in the morn, to 11 before noon, both included.

Here you have the hour-line of 9 at night given you by the Instrument for one of the 12 which for this Southwesterly face is usefess, in respect the Sun continues not so long above our Horizon, yet it must not bee left out of either the Table, or greater rundle of the lesser Diagram n° B, becauf without it you cannot divide the whole rundle (which represents the Plane) into 24 hours; which beeing don, you will bee enabled thereby to take thereout, such hour-lines

as

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as are in use for the Northeasterly or contrarie face; as the lesser scrole in the lesser Diagram *n° B* shews, but they are to bee placed contrarie to what they are in the lesser scrole, as the little rundle, for the Northeasterly face shews, by the reason formerly given.

The Table.

The hour of — 10: 83: 00 — 35: 40 Substiler.

11: 33: 30 — 5: 38: 00

Perpendicular 12: 00: 00 — 6: 41: 45

1: 15: 15 — 7: 47: 30

2: 23: 00 — 8: 55: 20

3: 29: 00 — 9: 69: 00

4: 33: 30 —

An Explanation of the Diagrams *N° C & C.*

THe third example of an Upright Declining Plane proposed to decline 63: 00 Easterlie from North.

Here you have

Az A the Horizontal } lines of this Plane.

Bz B the Perpendicular }

C the Pole of the Plane in the North-east quarter of the Instrument, because the Northeast face is set for principal.

CLPE the proper meridian of this Plane.

L the point of this Meridian's crossing the Plane.

CLK the Substiler line.

Az A serv's for the occult line 90: 00 from *C* or *E*.

zL 36: 00 the Meridian's distance from *z* in the occult line.

zh: 54, 00 the Pole of this proper Meridian at *h*.

no in the limb, beeing the measure of the Arch of this proper Meridian, betwixt *P* and *L* is 16: 30.

The Pole's height above this Plane — 16: 30.

The hour-lines in use for the North-easterly face, are from 4 in the morn, to 11 before noon (both included); and for the South-westerly

D



westerly, or contrarie face; all the hour-lines from a little after 10, or indeed from 11 to 8 (both included) because the hour-line of 11 is the first real or perfect hour-line.

Note that these two Planes *n° B* & *n° C* are both one and the same Plane, onely here is all the difference, that in the Diagram *n° B* the South-westerly face is proposed for principal; and in the Diagram *n° C* the North-easterly face is set for principal, as by the Poles of each face doth appear; by which you may plainly perceiv, that what face soever of any Plane is set for principal, the hour-lines and Substiler thereof, beeing taken out of the Instrument just as they lie therein, shall bee the perfect diall, without any alteration for the face proposed; but the hour-lines for the contrarie face must bee contrarily plac'd, &c.

All which doth most plainly appear in the two lesser Diagrams, *n° B* *n° C*.

Furthermore, because these two Planes have the same Declination, therefore at one working you have the hour-lines, Substilers and and Poles height for both, as by the Tables and hour-lines in use for each do appear, all agreeing in every respect the one with the other.

The Table.

The hour of—10: 83: 00 — : 35: 40 Substiler.

11: 33: 30 — 5: 38: 00

Perpendicular 12. 00: 00 — 6: 41: 45

1: 15: 15 — 7: 47: 30

2: 23: 00 — 8: 55: 20

3: 29: 00 — 9: 69: 00

4: 33: 30 —

An explanation of the Diagrams N^o D & D.

THe first example of a Declining Inclining Plane, falling betwixt the Pole and Horizon :

Proposed to { Decline 24: 20 Westerlie from the South.
Incline 36: 00 Northerlie.

Here you have likewise

Az A the Horizontal line of the Plane.

Bz B the line crossing the Horizontal at right angles.

zT 54: 00 from *z* beeing the complement of Inclination.

ATA the Declining Inclining Plane proposed.

zm 36: 00 from *z* beeing the place of the Pole of the Plane at *m*.

qmi Lq the proper Meridian of the Plane, beeing in this Diagram the same with the hour-circle of one.

Dz D the occult line 90: 00 from either *q* in the limb.

zi 9: 00 the Meridian's distance from *z* in the occult line.

zh 81: 00 from *z* the Place of the Pole of this Meridian at *h*.

L the point of this Meridian's crossing the Plane.

mLK the Substiler line, and hour-line of one also.

no in the limb, beeing the measure of the arch of this proper Meridian betwixt *P* and *L* is 17: 00.

The North-pole's height above the upper or South-westerlie face is 17: 00, so much also must the South-pole be elevated above the lower or North-easterlie face, as by the situation of the Plane in the Diagram doth appear.

The hour-lines in use for the upper face are from 7 in the morn, to 7 in the evening (both included).

And for the lower face from 4 in the morn to 7 before noon (both included) and onely 8 at evening, when the Sun is in the Summer Tropique.

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The Table.

The hour of—	8:63:00	—2:10:40
	9:42:20	—3:5:30
	10:32:00	—Perpendicular
	11:25:00	—4:1:40
	12:20:00	—5:12:40
Substiler &—	1:15:40	—6:33:50
	—, —	—7:75:30

An explanation of the Diagrams N^o E & E.

THe second Example of a Declining Inclining Plane falling to the Southwards of the Zenith.

Proposed to—
 { Decline 45:00 Westerly from South.
 { Incline 38:30 Southerlie.

Here you have

AzA the Horizontal line of this Plane.

BzB the line crossing the Horizontal at right angles.

zT 51:30 from *z*, beeing the complement of Inclination.

ATA the Declining Inclining Plane proposed.

zm 38:30 from *z*, beeing the place of the Pole of the Plane at *m*.

qmiLq the proper Meridian of this Plane.

DzD the occult line 90:00 from either *q* in the limb.

zi 36:00 the Meridian's distance from *z* in the occult line.

zh 54:00 from *z* the Plane of the Pole of this Meridian at *h*.

L the point of this Meridian's crossing the Plane.

mLK the Substiler line.

no in the limb, beeing the measure of the arch of this proper Meridian betwixt *P* and *L* is 62:40.

The North-Pole's height above the upper face 62:40.

Here in this Diagram N^o E, when the Sun is in the Summer Tropique, it will begin to appear upon the upper, or Northwesterlie face of this Plane, just at 7 in the morn, but I have made the hour-lines in use for this upper face, from 8 in the morn, to 8 at evening (both included)

included) becauf the hour-line of 8 in the morn is the first reall or perfect hour-line.

And the hour-lines in use for the lower or South-easterlie face are from 4 in the morn, when the Sun is in the Summer Tropique to the point *f* in the Winter Tropique, which is about half an hour past 2, therefore from 4 to 2, (both included).

Here, as I have formerly said, (although in this Diagram) the North-west face is the face proposed and set down, as the Pole of its Plane at *m*, in the North-west quarter of the Instrument plainly shew's, yet the hour-lines in and by the Instrument are all drawn for the South-east, or lower face, as the lesser scrole in the lesser Diagram *n° E* shew's, beeing the same with the hour-lines and Substiler in the Instrument, *viz.* from 4 in the morn, to 3 afternoon: Now if by these you divide your plane into 24 hours, all the hour-lines which shall bee in use for the upper face, *viz.* from 8 in the morn to 8 in the evening (both included) shall bee the perfect dial for this upper face, becauf it is the face set in the Instrument for principal, as the greater scrole and little rundle *n° V* shew's, beeing all one.

But the hour-lines which are in use for the lower face, from 4 to 2, must bee contrarily plac'd, &c. as the little rundle *n° L* shew's, and this is general for all Southerlie Incliners whatsoever.

The Table.

The hour of—4: 83: 00—Perpendicular,

Substiler line—72: 40—10: 4: 30

5: 69: 30—11: 21: 00

6: 56: 00—12: 38: 00

7: 42: 00—1: 54: 00

8: 27: 40—2: 69: 30

9: 12: 00—3: 83: 30

An explanation of the Diagrams N^o F & F.

THe third Example of a Declining Inclining Plane, falling betwixt the Pole and Zenith.

Proposed to— $\left\{ \begin{array}{l} \text{Decline } 24 : 20 \text{ Westerlie from South.} \\ \text{Incline } 75 : 00 \text{ Northerlie.} \end{array} \right.$

Here you have

Az A the Horizontal line of the Plane.

Bz B the line crossing the Horizontal at right angles.

zT 15 : 00 beeing the complement of Inclination.

ATA the Declining Inclining Plane proposed.

zm 75 : 00 from *z*, beeing the place of the Pole of the Plane at *m*.

qmi Lq the proper Meridian of the Plane.

Dz D the occult line $90 : 00$ from either *q* in the limb.

zi 15 : 00 the Meridians's distance from *z*.

zh 75 : 00 from *z* the place of the Pole of this Meridian at *h*.

L the point of this Meridian's crossing the Plane.

m L K the Substiler line.

no in the limb, beeing the measure of the arch of the proper Meridian, betwixt *P* and *L* is— $20 : 00$.

The North Pole's height above the lower or Northeasterlie face $20 : 00$; therefore the South Pole must bee elevated so much above the upper or South-westerlie face thereof.

The hour-lines in use for the upper face, are from 8 in the morn to 7 in the evening (both included).

And for the lower face, from 4 in the morn to 8 afore noon (both included) and onely 8 in the evening, when the Sun is in the Summer Tropique.

The Table.

The hour of — 8:60:00 — 16:20 Substiler.

9:27:00 — 2:17:30

10:10:20 — 3:22:30.

Perpendicular — 4:29:40.

11:00:40 — 5:38:20

12:07:00 — 6:52:30.

1:12:30 — 7:79:30.

An explanation of the Diagrams N^o G & G.

THe fourth example of a Declining Inclining Plane, falling near unto the Winter Tropicque.

Proposed to — } Decline 24:20 Easterlie from North.
 } Incline 14:20 Southerlie.

Here you have

AzA the Horizontal line of the Plane..

BzB the line crossing the Horizontal at right angles.

zT 75:40 from *z*, beeing the complement of Inclination.

ATA the Declining Inclining Plane proposed: —

zm 14:20 from *z*, beeing the place of the Pole of the Plane at *m*.

qmiLq the proper Meridian of the Plane.

DzD the occult line 90:00 from either *q* in the limb.

zi 8:00 beeing the Meridian's distance from *z*.

zh 82:00 from *z*, beeing the place of the Pole of this Meridian at *h*.

L the point of the Meridian's crossing the Plane.

mLK the Substiler line.

no in the limb, beeing the measure of the arch of this proper Meridian, betwixt *P* and *L* is 116:00 Southerlie, from *P* to the edg of the Plane at *L*.

Here you must remember what was said at first, that every Plane cut's or divide's the globe of the Univers into two equal halves, which considered, if you take 116 the distance of the North-pole from

from the Southern edge of the Plane at *L* out of 180:00 the semicircle, there will remain 64:00 for the elevation of the same Pole above the Northern edge of the same face, being the upper face of the Plane. North-pole's height above the upper face 64:00.

Now the situation of this Plane in the instrument you see, that all the while the Sun hath above 15:00 North Declination, it shine's upon the upper face of this Plane, from its rising to its setting (when the daies are at longest with us) for you see the parallel of 10:00 North Declination, crosseth the Plane but a very small time before the Sun setting, when it is therein.

So that for the upper or North-easterlie face you must have all the hour-lines from 4 in the morn to 8 at evening (both included).

And for the lower or South-westerlie face, first 8 and 9 in the morn, and then from 2 to 7 in the evening, which hour-lines will be of very small use, because the Plane incline's so much Southerly.

Note likewise, that this Plane is a Southerlie Declining Inclining Plane, as the Plane in the Diagram *n° E* is, therefore the same method is to be observed, as is there taught, which is also most plainly demonstrated in the lesser Diagram of this number *G*.

The Table.

The hour of — 8: 79: 10 — Perpendicular.

9: 64: 30 — 2: 4: 40

10: 50: 30 — 3: 20: 00

11: 37: 20 — 4: 35: 40

Substiler — 34: 20 — 5: 52: 00

12: 24: 00 — 6: 69: 00

1: 9: 30 — 7: 85: 10

An explanation of the Diagrams N^o H & H.

Being an example of a Meridian Inclining Plane, proposed to Incline $53 : 00$ Westerlie.

I have said before, that for all Planes of this nature, the Meridian line, or North and South line in the Instrument $N \propto S$ must bee one and the same line with, and serv for the Horizontal line of the Plane; And therefore the Prime Vertical, or East and West line in the Instrument $W \propto E$ stand's for the line which must cross the Horizontal line of the Plane at right angles: The rest of the work differ's nothing from the former Declining Inclining Planes.

So that here the Meridian

$N \propto S$ is the Horizontal line of this Plane.

$W \propto E$ stand's for the line crossing the Horizontal at right angles.

$z T 37 : 00$ from z , beeing the complement of Inclination.

NTS the Meridian Inclining Plane proposed.

$zm 53 : 00$ from z , beeing the place of the Pole of this Plane at m .

$q m i L q$ the proper Meridian of this Plane.

$D \propto D$ the occult line $90 : 00$ from either q in the limb.

$z i 35 : 00$ this Meridian's distance from z in the occult line.

$z b 55 : 00$ from z the place of the Pole of this Meridian at b .

L the point of this Meridian's crossing the Plane.

$m L K$ the Substiler line.

no in the limb, beeing the measure of the arch of this proper Meridian betwixt P and L is $28 : 30$.

The North-pole's height above the upper face $28 : 30$.

The hour-lines in use for the Eastern or upper face, are from 4 in the morn to 2 afternoon (both included).

And for the Western or lower face, all the hour-lines from 1 to 8 in the evening (both included).

The Table.

The hour of	12: 90: 00	6: 32: 40
	9: 65: 00	7: 40: 00
	2: 34: 45	: 44: 30 Substiler
	3: 7: 50	8: 47: 20
Perpendicular.	—00: 00	9: 54: 20
	4: 10: 45	10: 63: 00
	5: 23: 20	11: 74: 15

If the Plane shall incline Easterlie as this doth Westerlie, the same order in working is to bee observed in every respect.

An Explanation of the Diagrams N^o I & I.

THe first example of a Polar Declining Plane,
Proposed to { Decline 52: 00 Westerlie from South.
 { Incline 64: 00 Northerlie.

In these Polar declining Planes, you are to finde out by the Instrument two things in chief, and then the rest of the work will differ nothing from the making of an ordinarie Meridian, or direct Polar Diall.

The first is the Arch betwixt the Substiler and the Horizontal line of the Plane in degrees and minutes.

The second is the Inclination or distance betwixt the proper Meridian of the Plane, and the Meridian of the place; both which will bee easily given you by the Instrument.

Thus I set down upon the Instrument according to the Declination and Inclination proposed.

Az A the Horizontal line of the Plane.

Bz B the line crossing the Horizontal at right angles.

zT 26: 00 from *z*, beeing the complement of Inclination.

APT A is the Plane proposed, which in this Diagram fall's to bee the

the same with the Meridian or hour-circle of 9, cutting or crossing the Pole of the Instrument *P*; and therefore must bee a Polar Plane, and neither Pole elevated above either face.

z m 64 : 00 from *z*, beeing the place of the Pole of this Plane at *m*, which fall's just upon the hour-circle of three in the afternoon, and therefore the Substiler, and hour-line of 3 must bee one and the same line, and serv for both; as formerly in the Diagram *n° D* was demonstrated.

q P m q the proper Meridian of this Plane.

Now (as in every of the former Diagrams) if from the Pole of the Plane *m*, through the point of this Meridian's crossing the Plane, which is at *P* the Pole of the Instrument, you draw a right line to the limb, it must bee the Substiler line, and hour line of three also, which is represented by the line *m P K*, whose Horizontal Arch betwixt *A* and *K* in the limb, is *61* : 00 which is the first thing required.

The next is to observ where the Pole of your Plane fall's to bee either upon an hour-circle (as here it doth) or betwixt any two, for the distance thereof from the Meridian of the Plane (which in the Instrument is *z s*) beeing taken and converted into degrees and minutes, shall give the Inclination or distance betwixt the proper Meridian of the Plane, and the Meridian of the place, which is here represented by the Arch of the Equator *r m* in the South-west quarter of the Instrument, and therefore 3 hours of time, or *45* : 00 from the North and South line in the Instrument, which is the Meridian of the place; And this is the second thing required.

A K 61 : The Horizontal Arch.

r m 45 : 00 Inclination or distance betwixt the two Meridians.

Here the South-west face of this Plane is proposed for principal or upper face.

The hour-lines in use for which face, are from 10 before noon, to 8 in the evening (both included).

And for the lower face from 4 in the morn, to 8 afore-noon (both included).

Now to take the Table out of the Instrument, observ the place of the Pole of your Plane (which in these planes will alwaies fall upon the Equator) observ I saie, the place of the Pole of your Plane,

E 2 amongst

amongst the Meridians or hour-circles, which justly reckoned either waie to the next hour-circles one by one, by allowing 14:00 01 the Equator for every hour of time, (and so proportionably for any part of an hour, if the Pole fall betwixt two meridian or hour-circles) you may make a Table thereby, to transfer your hour-lines upon your Plane, which must bee the several distances of the hour-lines from the Substiler line of the Plane.

The Table.

The Substiler & hour of — 3:00:00

4 & 2:15:00

5 & 1:30:00

6 & 12:45:00

7 & 11:60:00

8 & 10:75:00

Now for delineating your diall upon your Plane, (the Table being made) first, as in the lesser Diagram of this number 1, I draw the Horizontal line *AA*, next at anie convenient point therein, *viz.* at *B*, I sweep the Arch *CD*, and finding out a chord of 61:00 for the arch betwixt the Horizontal line and Substiler, I put it over from *C* to *E*, through which point *E*, I draw the Substiler line *BHEF*, which must be the hour-line of 3 also, to which all the rest of the hour-lines must be parallel. Next at som convenient point in the Substiler line, *viz.* at *H*, I sweep a semicircle, whose semidiameter *HI*, I proportion to bee the height of the Stile above the Plane, then through this point *I*, at right angles to the Substiler line, I draw the line *GIG*, & another line parallel to this *AHL*, by which two parallel lines, you shall set down your hour-lines upon your Plane, by the Table and this Canon.

The Canon.

As *HI* Radius to *IK* the Tangent of 75:00, beeing the distance of the hour-lines of 8 & 10 from the Substiler.

So is $HI \frac{30}{100}$ of an inch to $IK \frac{87}{100}$ of the same measure to bee set off from either side the Substiler, in the two parallel lines and so draw the lines through the Plane, as the line 8 & 8 shew's. And so for all the rest the same method hold's.

An explanation of the Diagrams K & K.

THE second Example of a Polar Declining Plane,
Proposed to— $\left\{ \begin{array}{l} \text{Decline } 62 : 30 \text{ Easterly from South.} \\ \text{Incline } 70 : 00 \text{ Northerly.} \end{array} \right.$

According to which propofal I draw

AzA for the Horizontal line of the Plane.

BzB for the line crossing the Horizontal at right angle.

zT $20 : 00$ from z , beeing the complement of Inclination.

$ATPA$ is the Polar Declining Plane proposed, becaus it passeth through the Pole of the Instrument P .

zm $70 : 00$ from z , the place of the Pole of this Plane at m .

$qPmq$ the proper Meridian of this Plane.

P the point of this Meridian's crossing the Plane.

mPK the Substilerline, whose Horizontal Arch from A to K is $56 : 00$ in the limb of the Instrument.

The Inclination or distance betwixt the proper Meridian of the plane, and the Meridian of the place is the Arch of the Equator $v m$, beeing in time about three hours $48 : 00$ before noon, which is $12 : 00$ after 8 in the morn, or $57 : 00$ in measure, as the Pole of the plane at m shew's.

The Horizontal Arch $56 : 00$.

Distance betwixt the two Meridians $57 : 00$.

The hour-lines in use for the upper or Southeastern face are, from 4 in the morn, to one after noon (and no more) except the plane be very large. And for the lower face from 3 to 8 at evening (both included).

*The Table of the distances of the several hour-lines
from the Substiler.*

The hour of—3:78:00—Substiler line.

4:63:00—9:12:00

5:48:00—10:27:00

6:33:00—11:42:00

7:18:00—12:57:00

8:03:00—1:72:00

—————2:87:00

Thus the Table beeing made, the delineation or drawing of your lines upon the Plane, differ nothing from that of the former Diagram.

F I N I S.

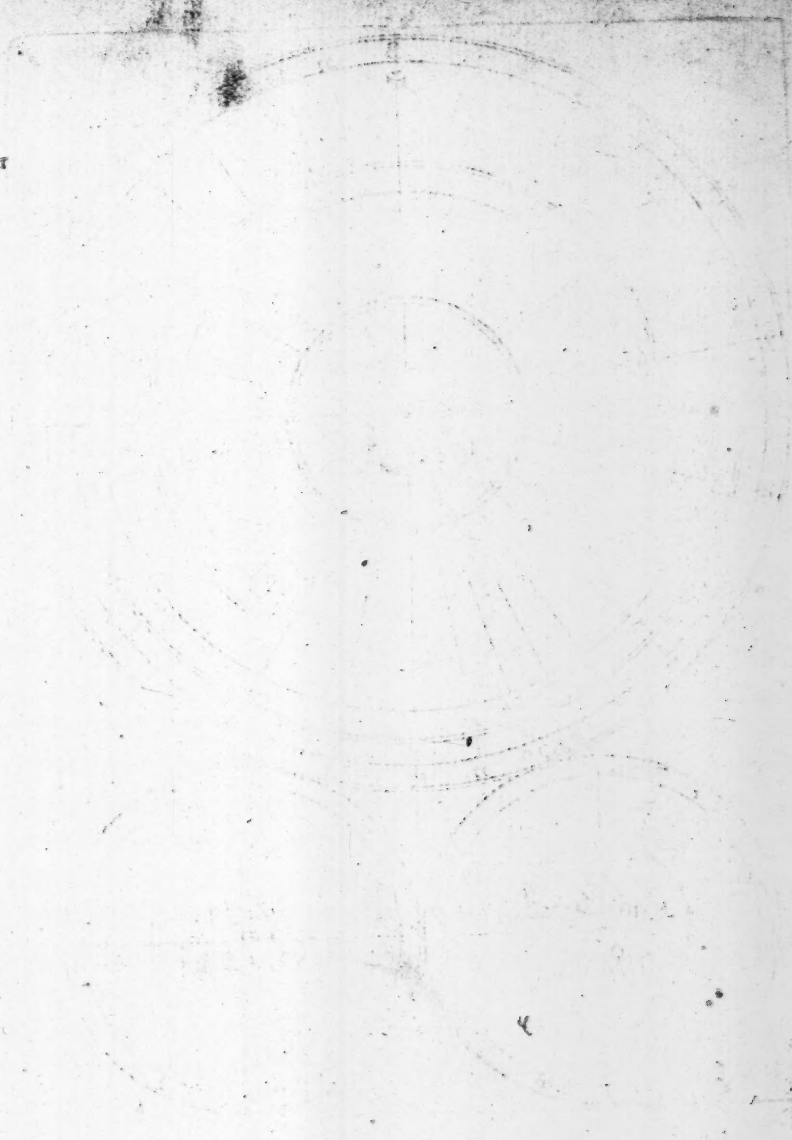
If any shall desire to have this Instrument ready printed off in paper for his use or practice, hee may bee furnished with what quantitie hee desire's by William Hope Book-seller at the Blew Anchor on the backside the Exchange, London.

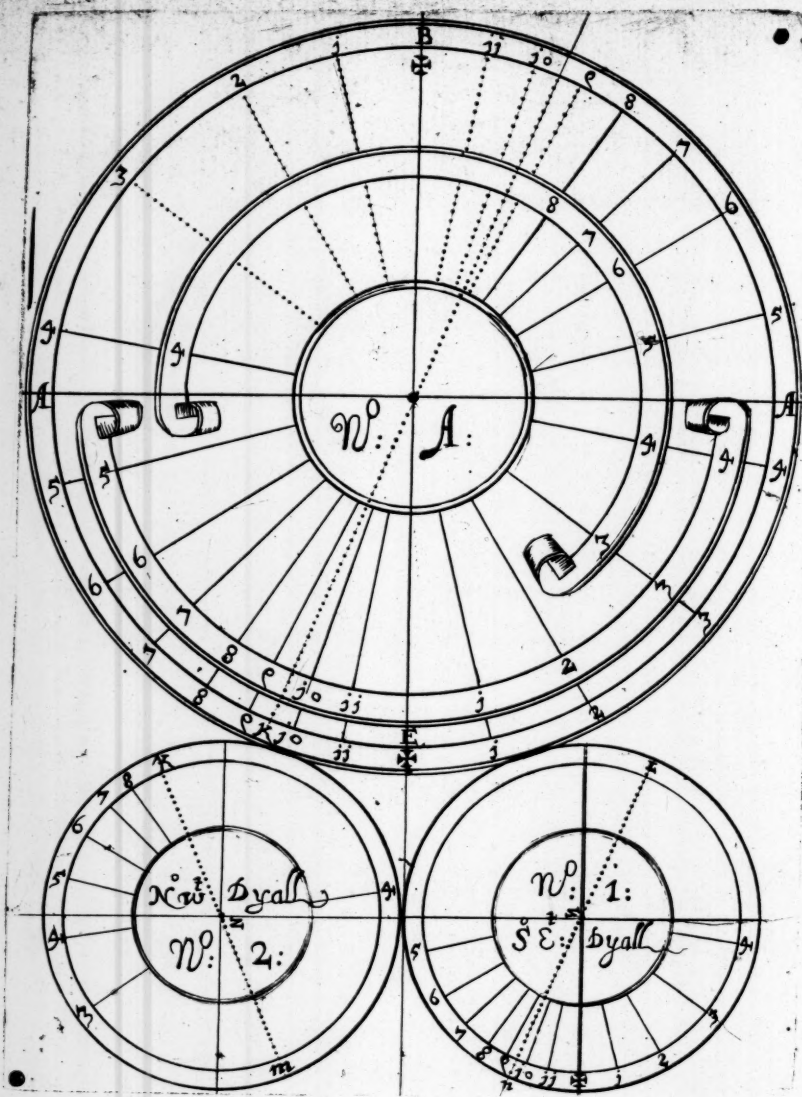
If in brass, hee may have this or any other for the Mathematical practice, made by Walter Hayes, at the Cross-Daggers in Moor-fields, near Bethlem-gate.

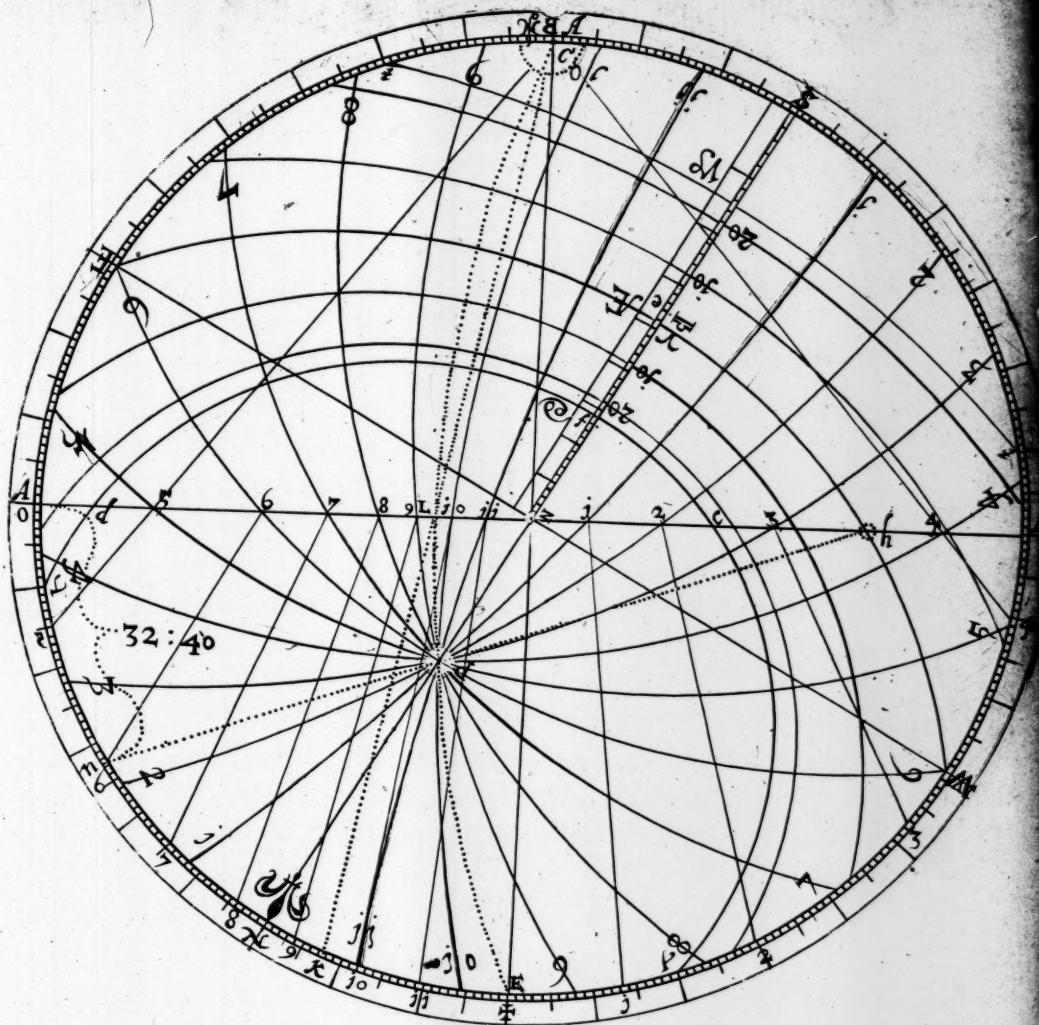
ERRATA.

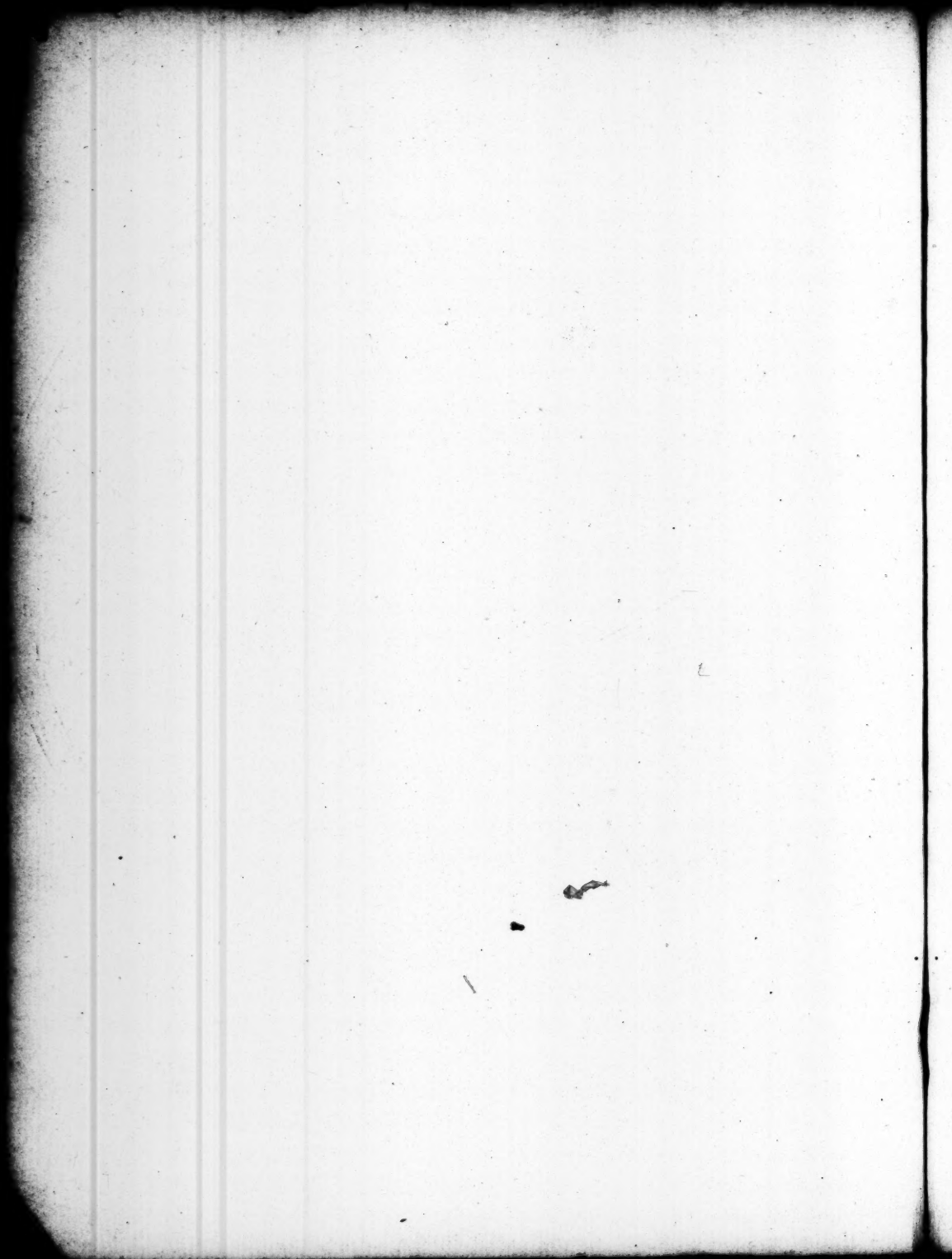
In the Epistle line 20, read *circles* for *rules*. Page 9, line 13, for *those* read *these*. Page 24, line 13, for *plane* read *place*. Page 28, line 5, for *now*, the read *now by the*. Page 32, line 2, for 14:00 read 15:00.

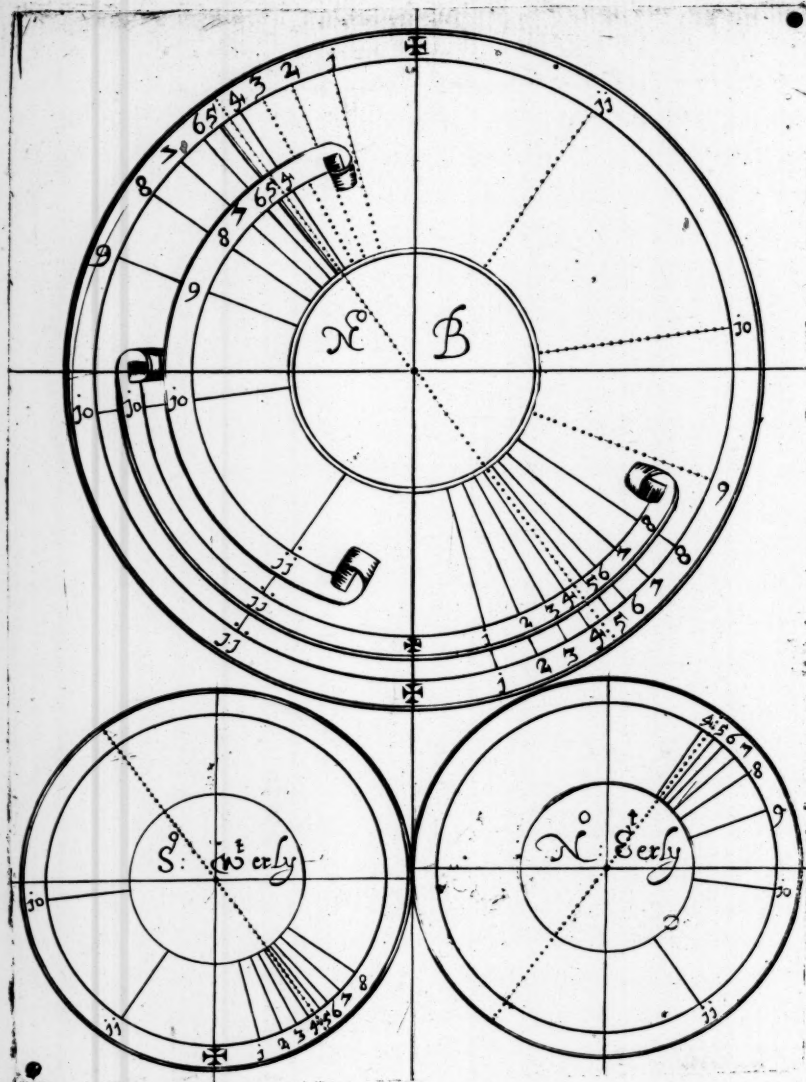




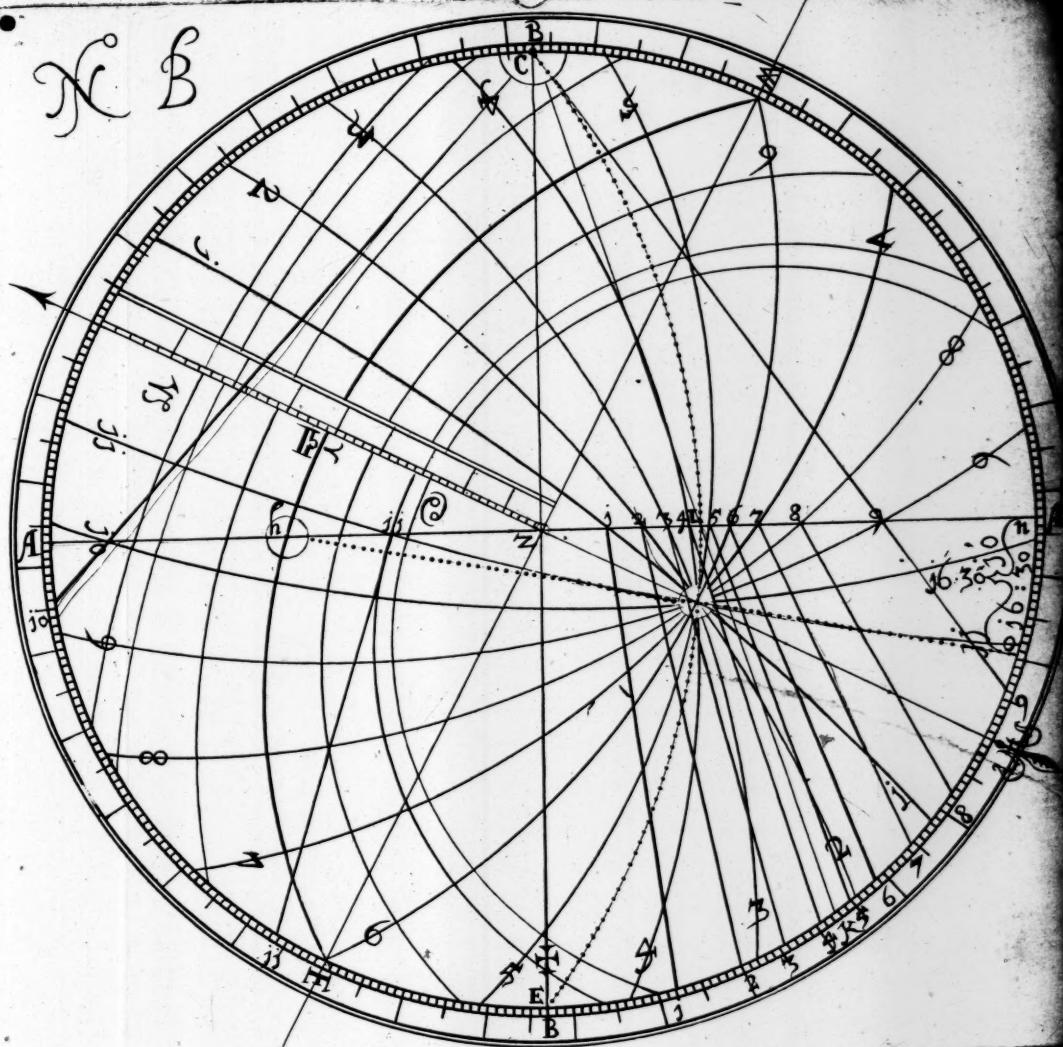






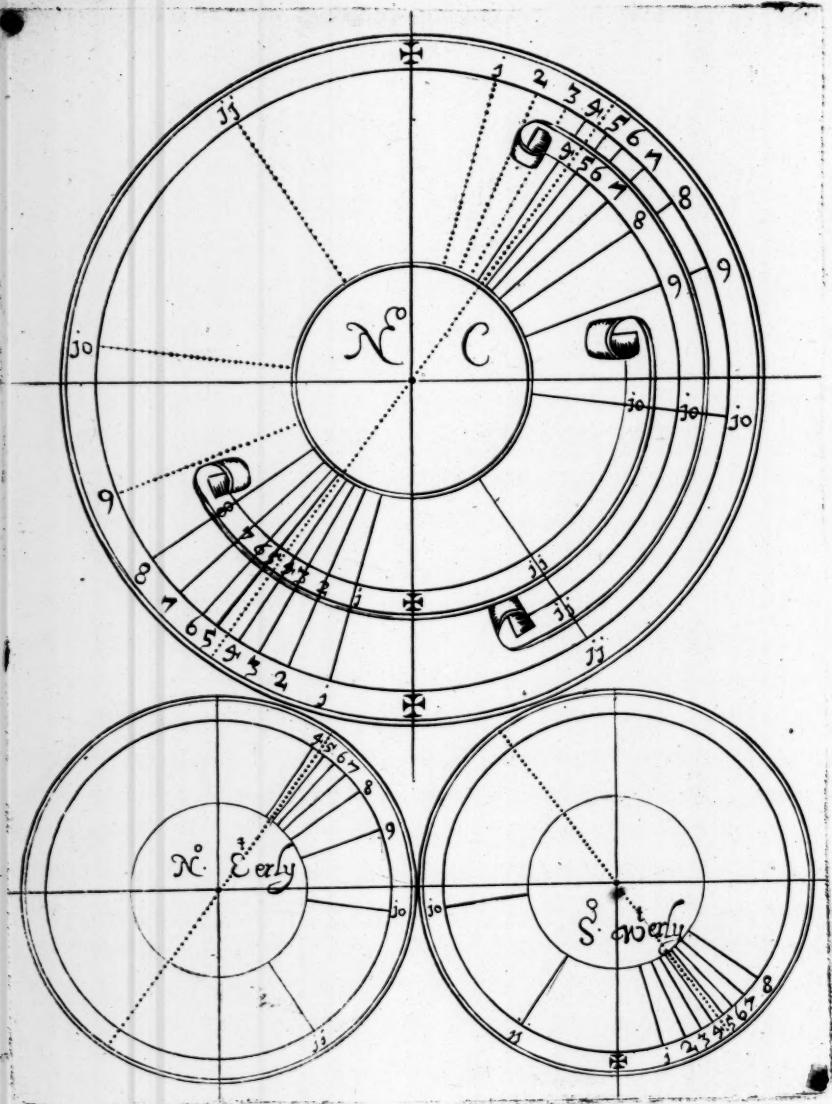


N B

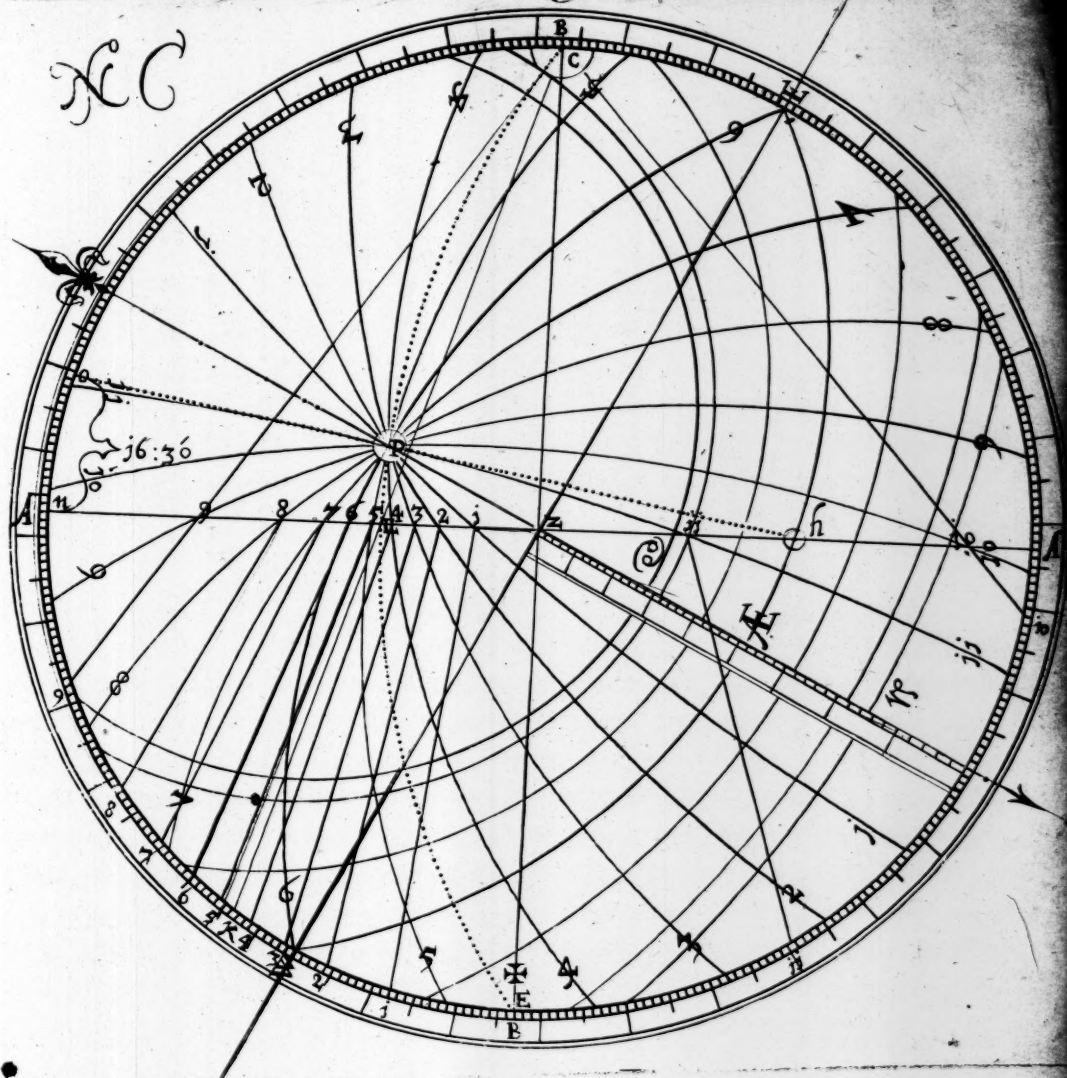


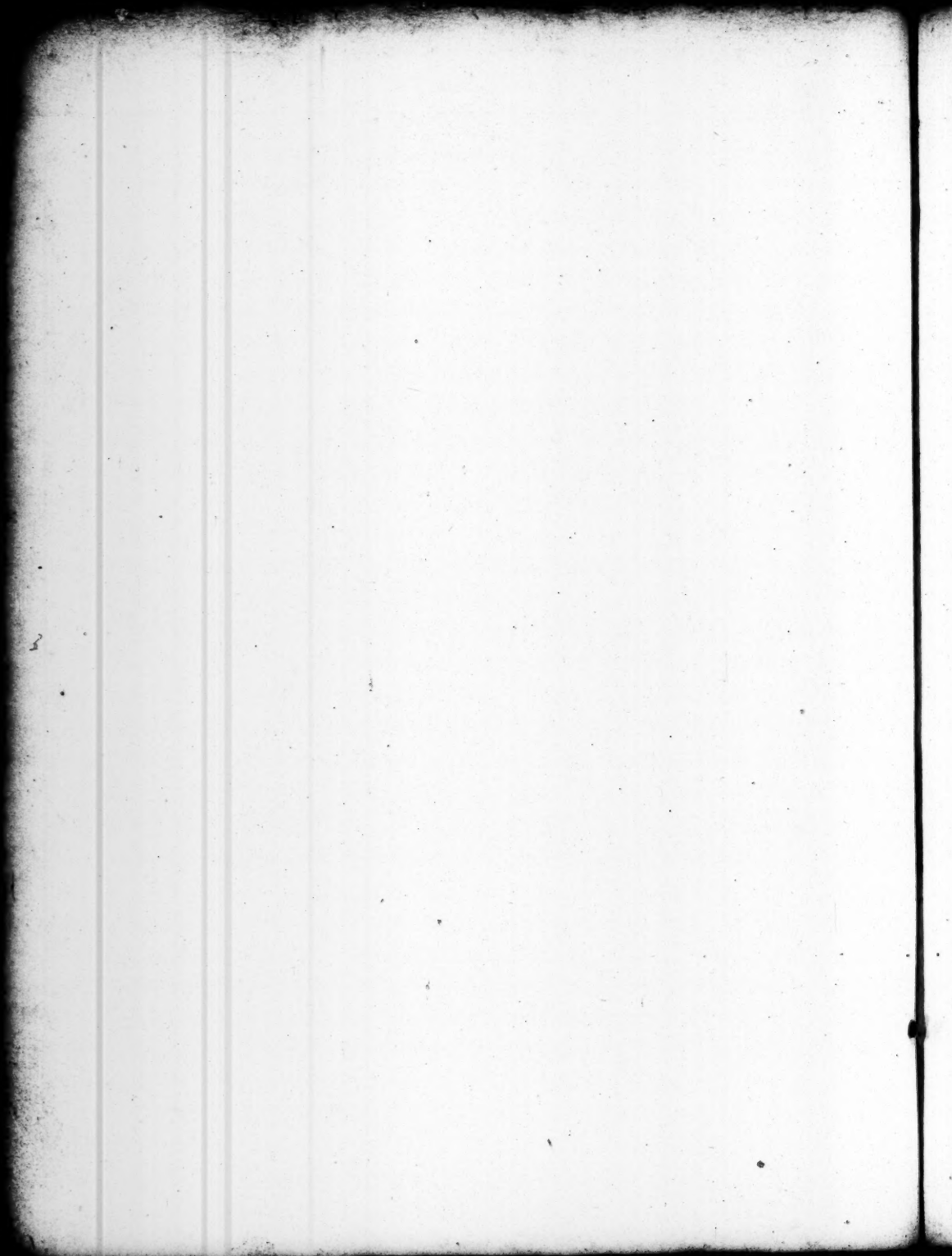




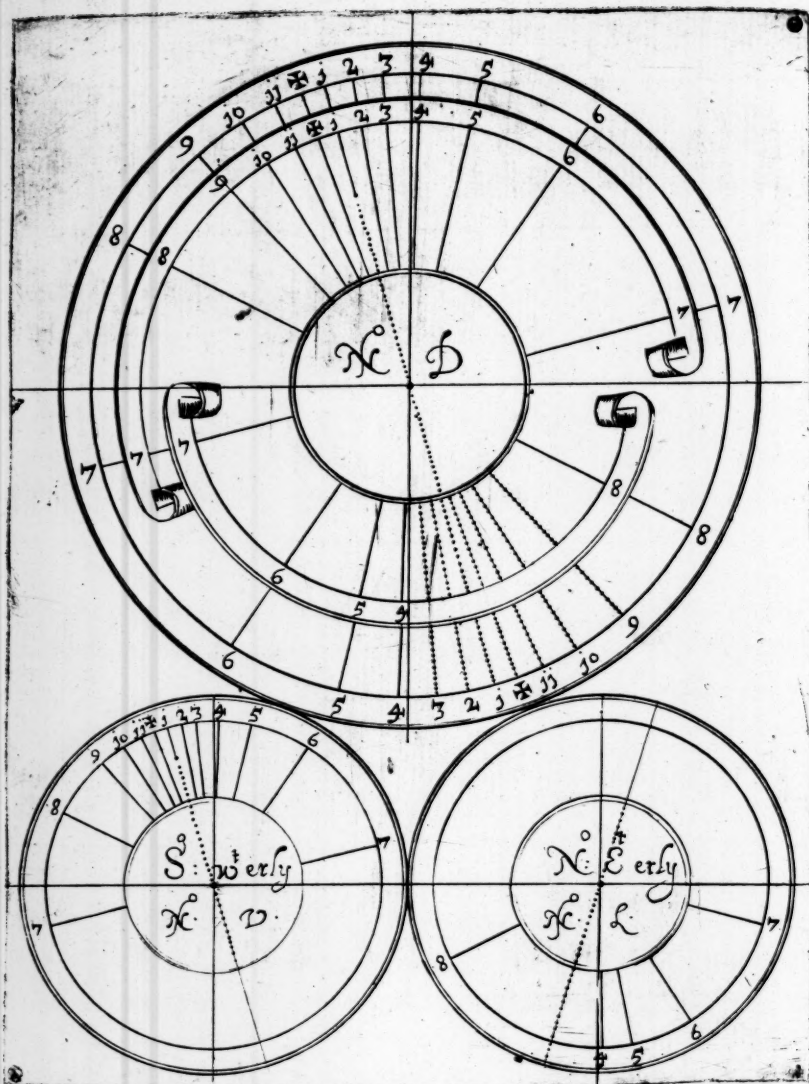


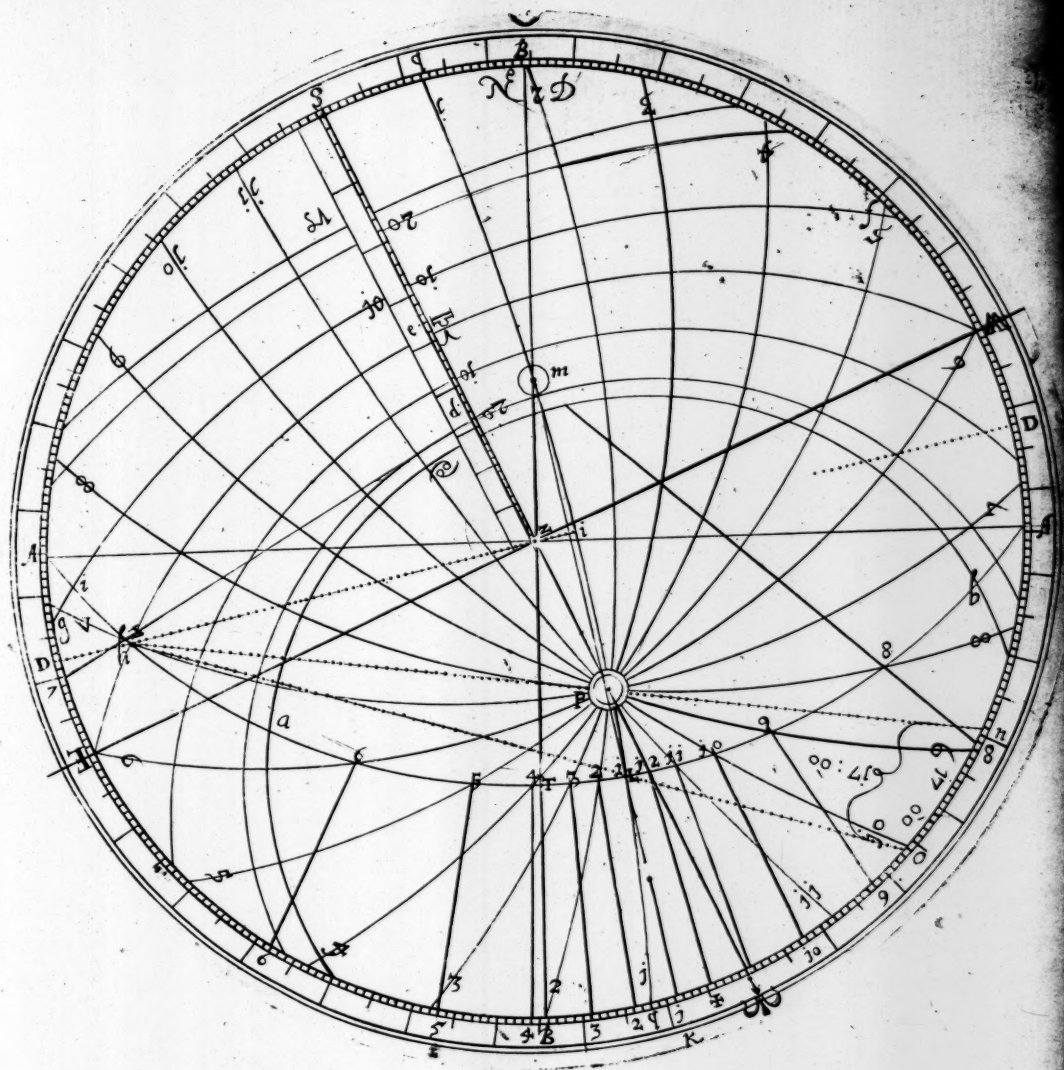
XC

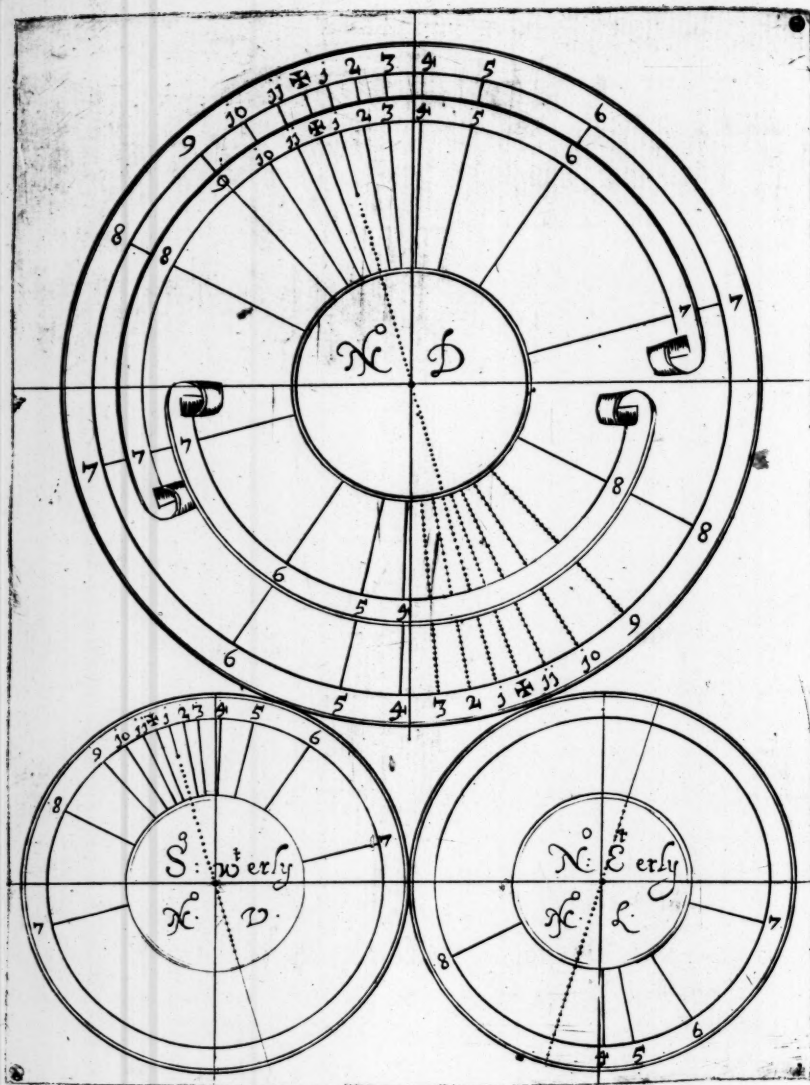


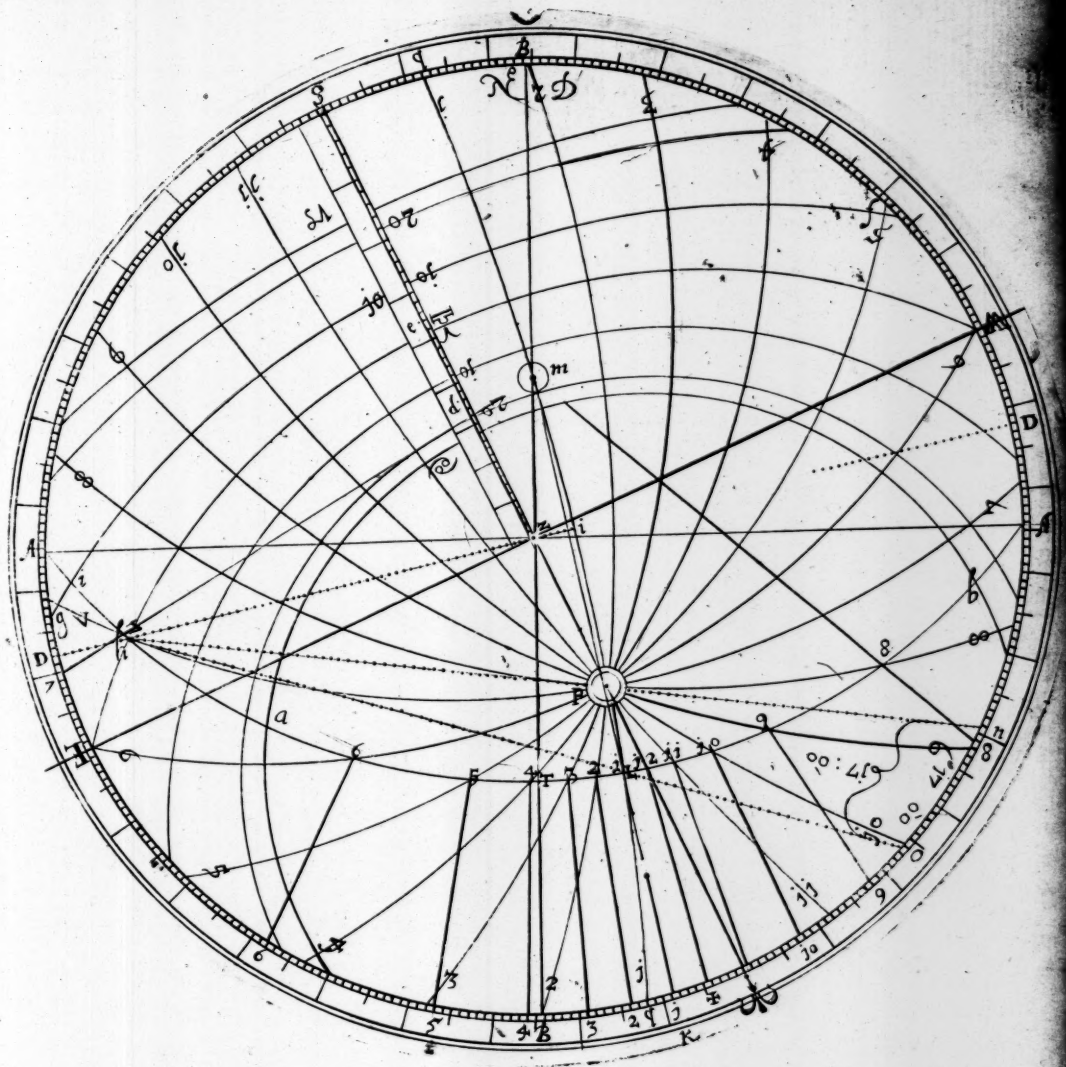


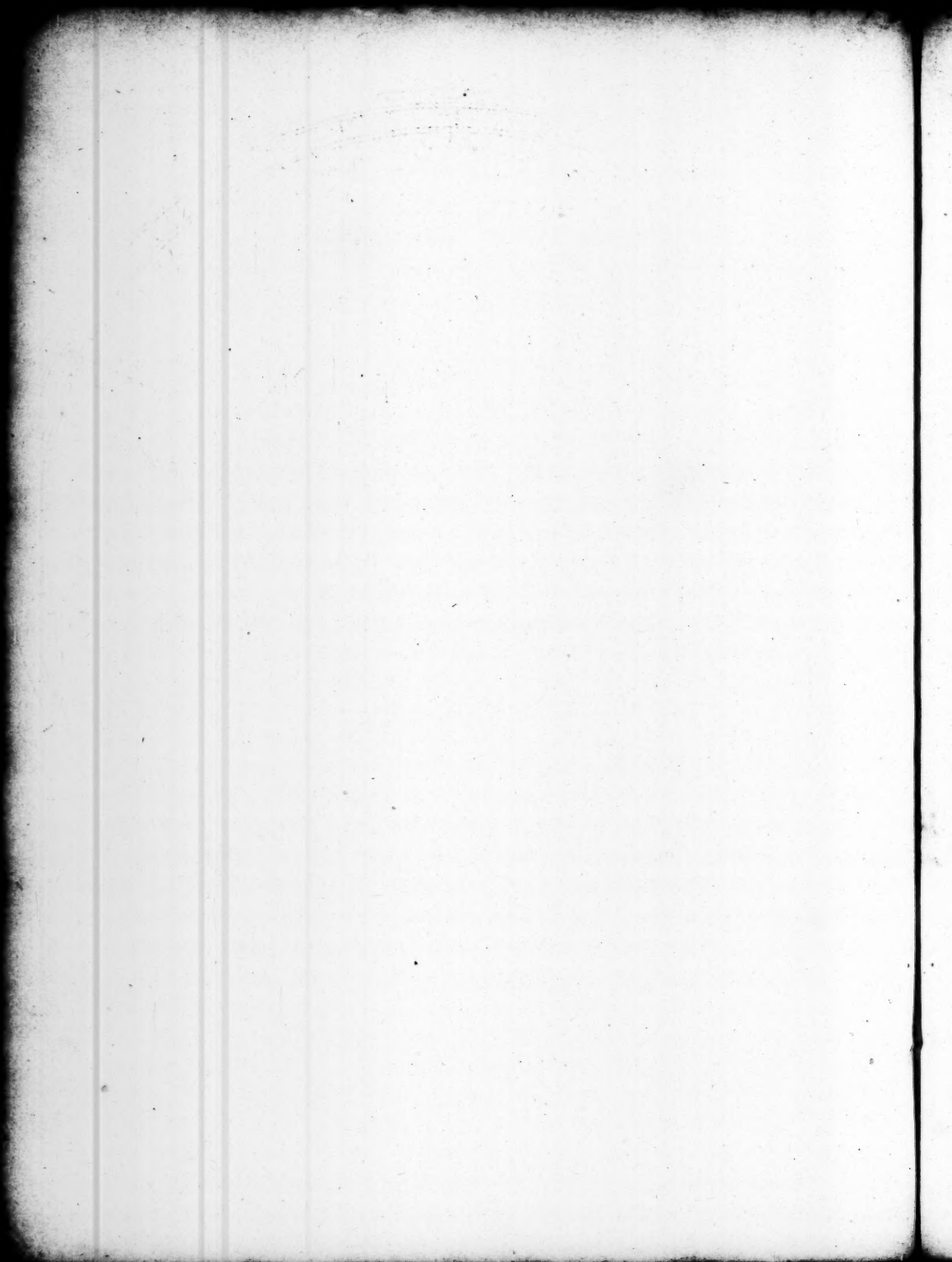


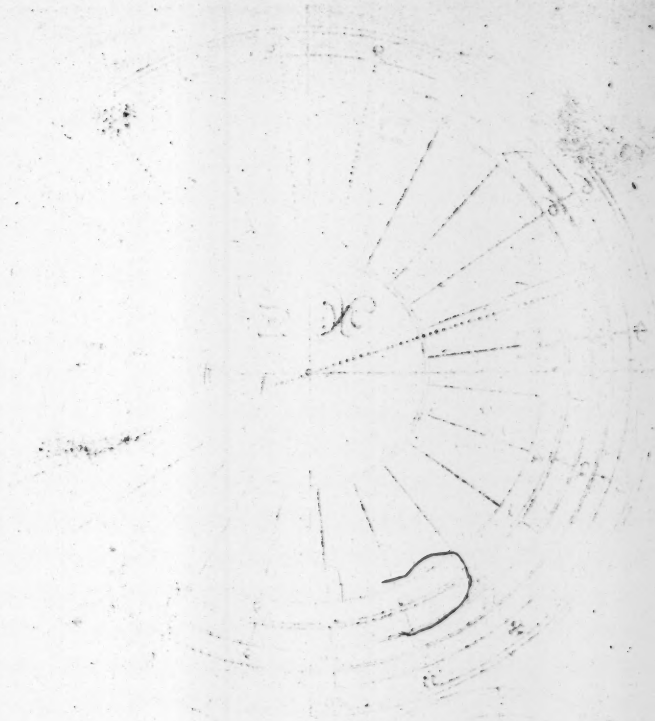


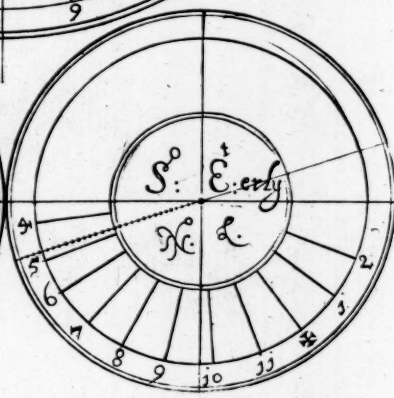
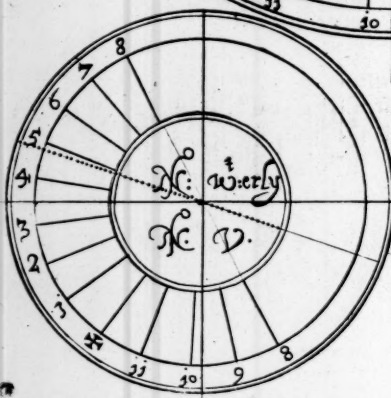
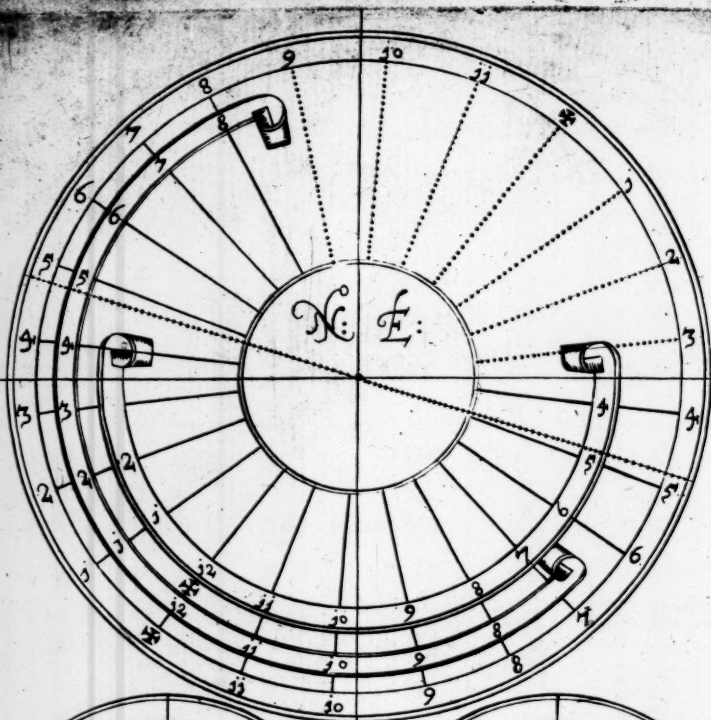




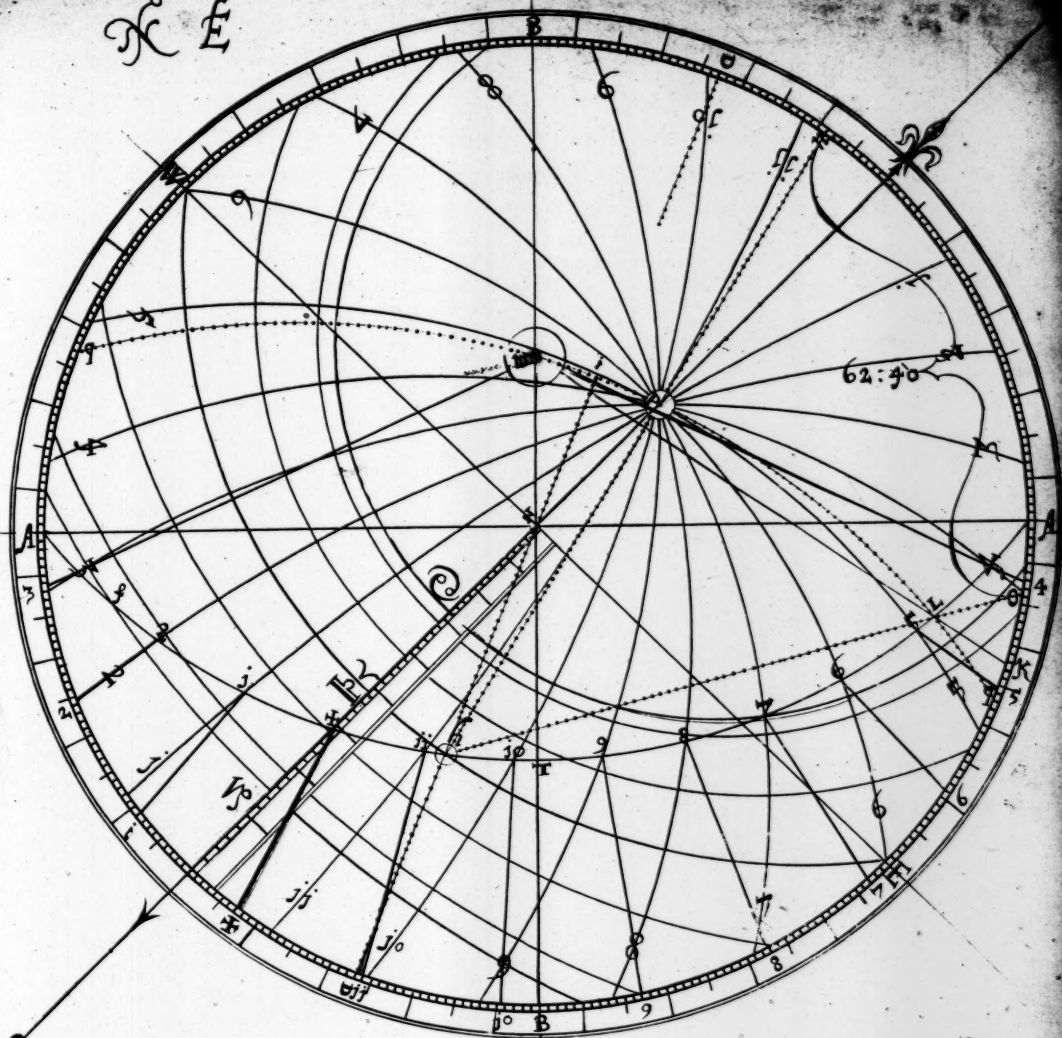


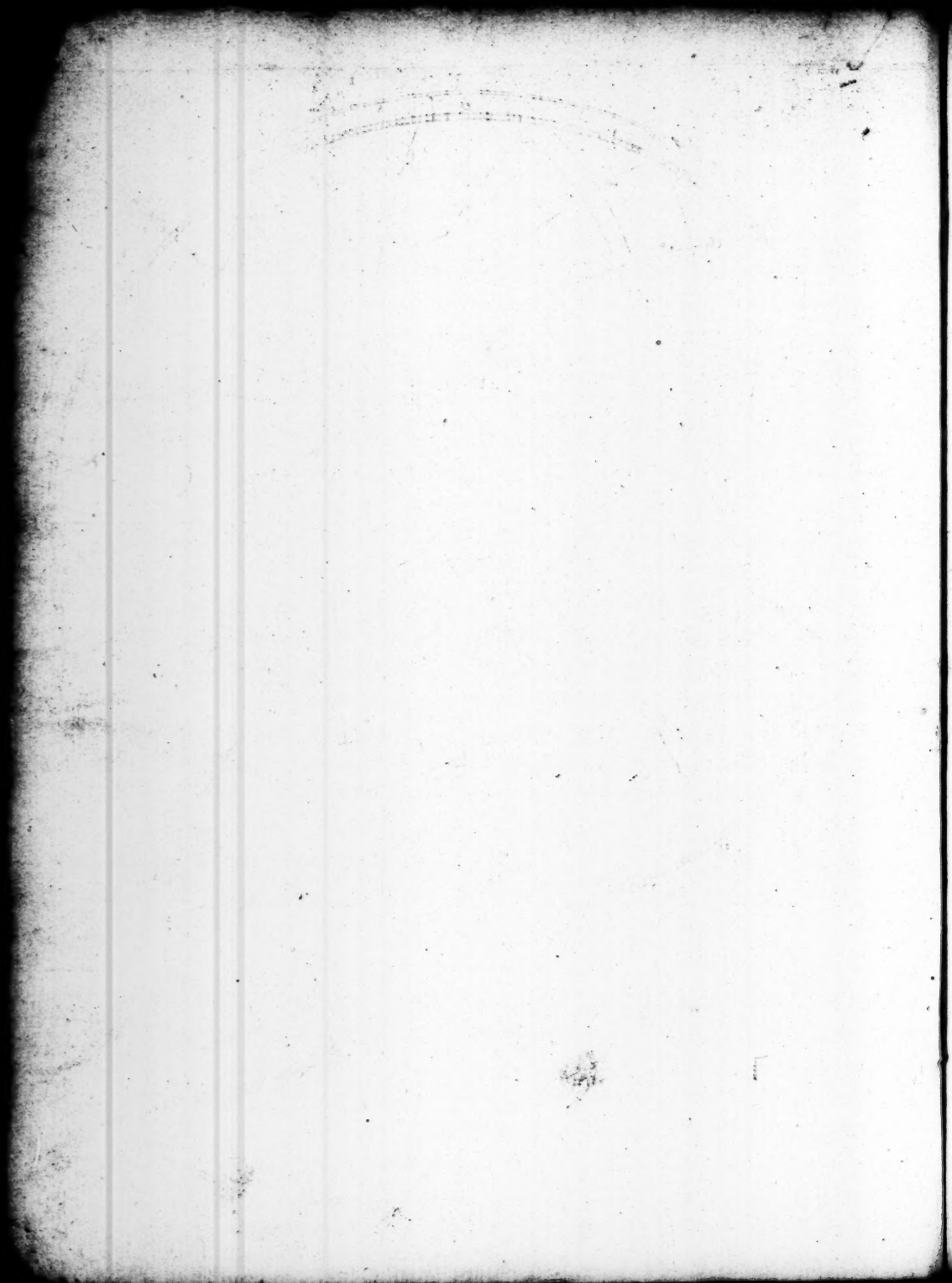


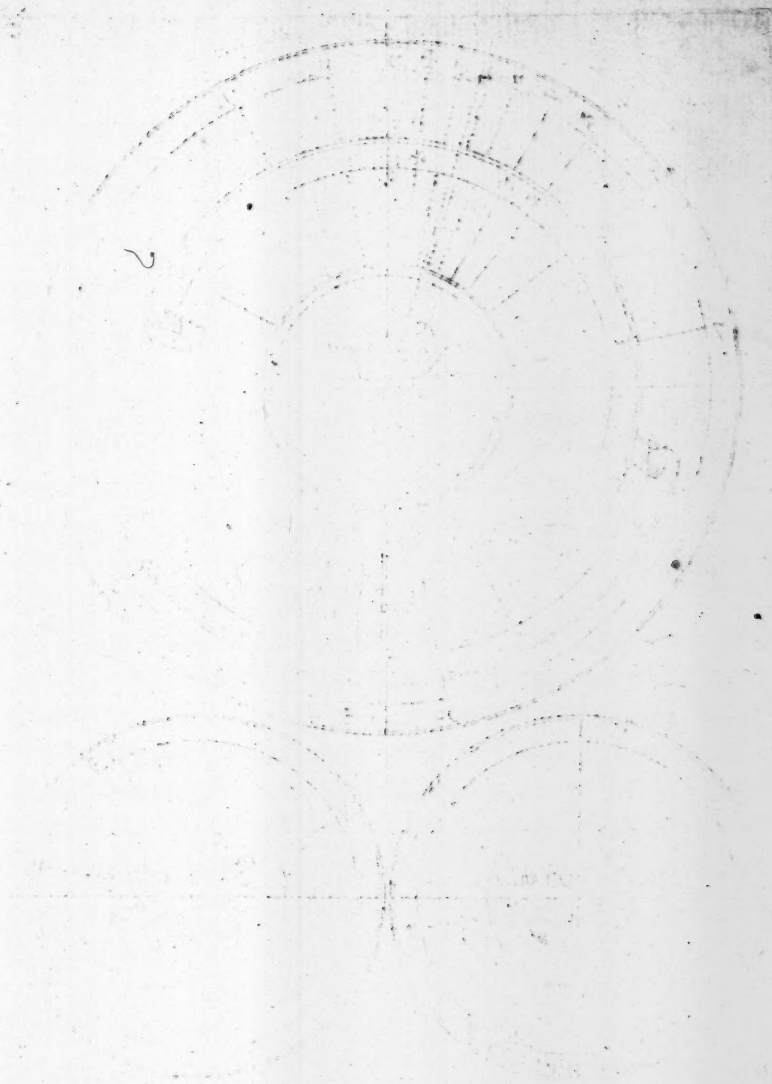


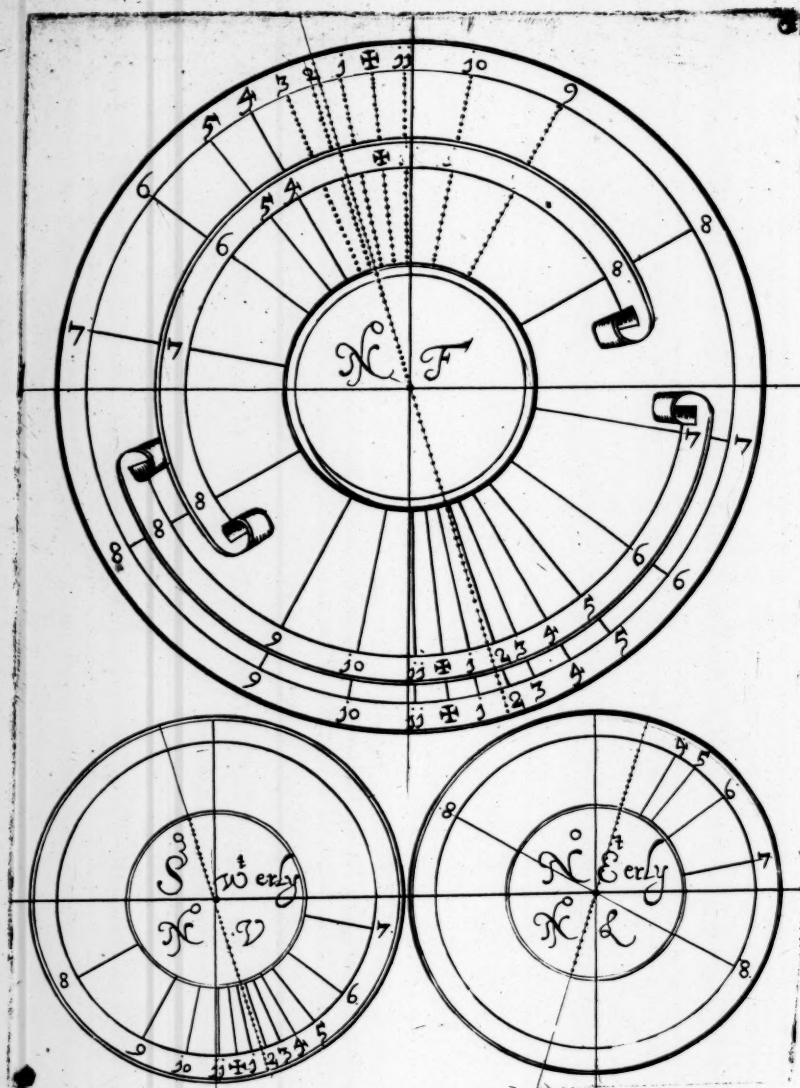


N E

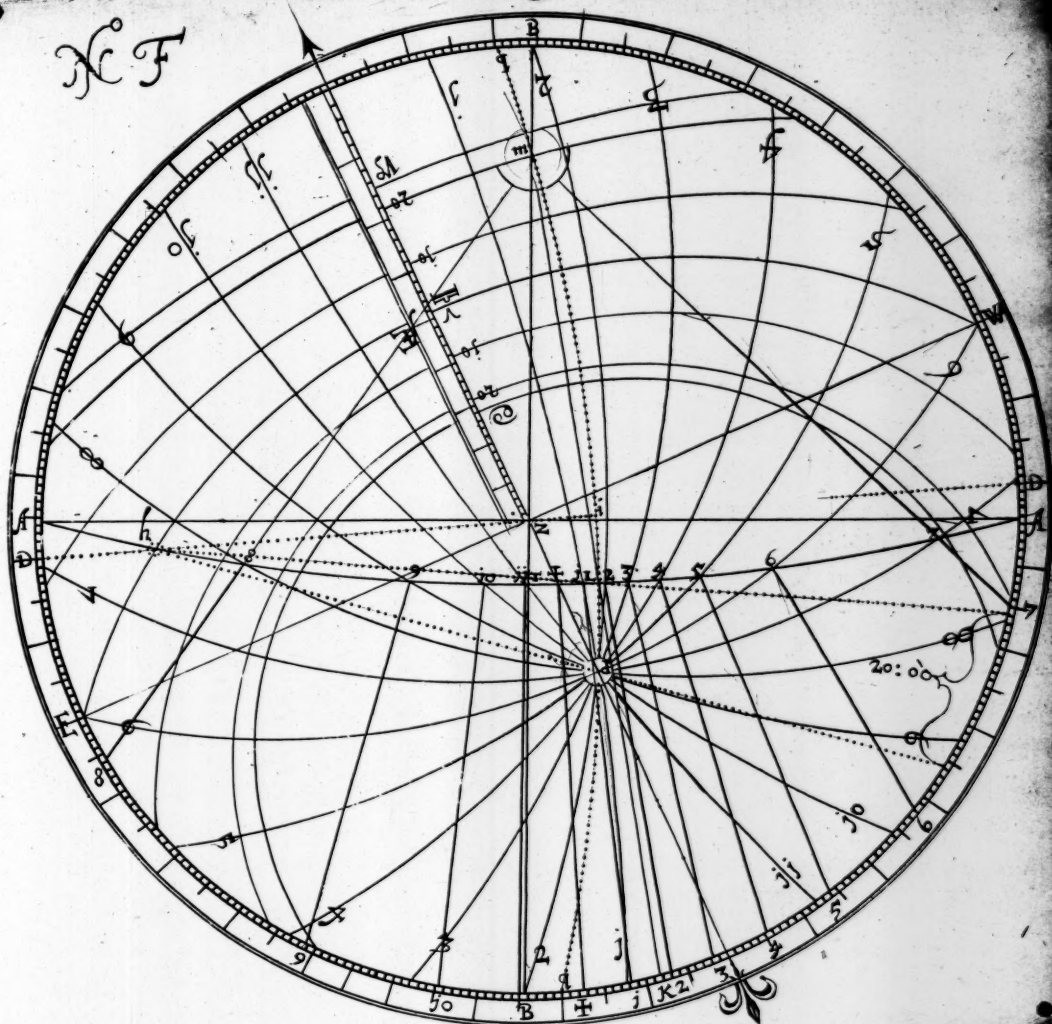






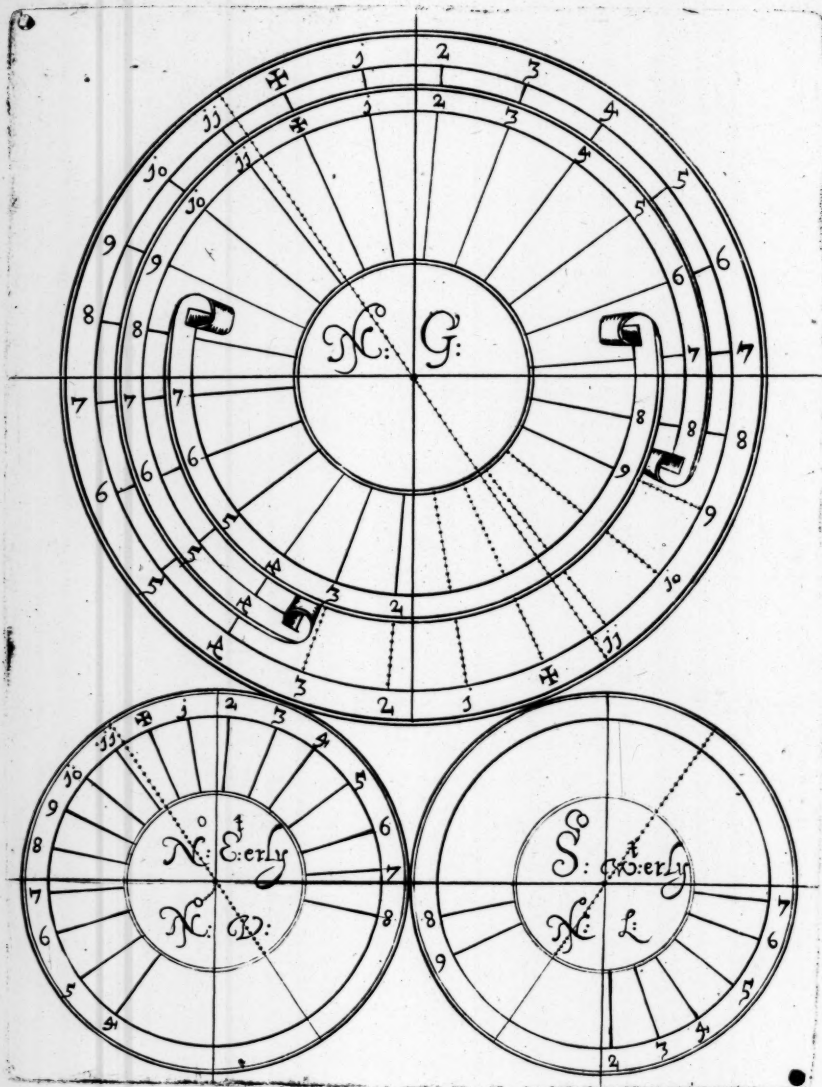


N^o F

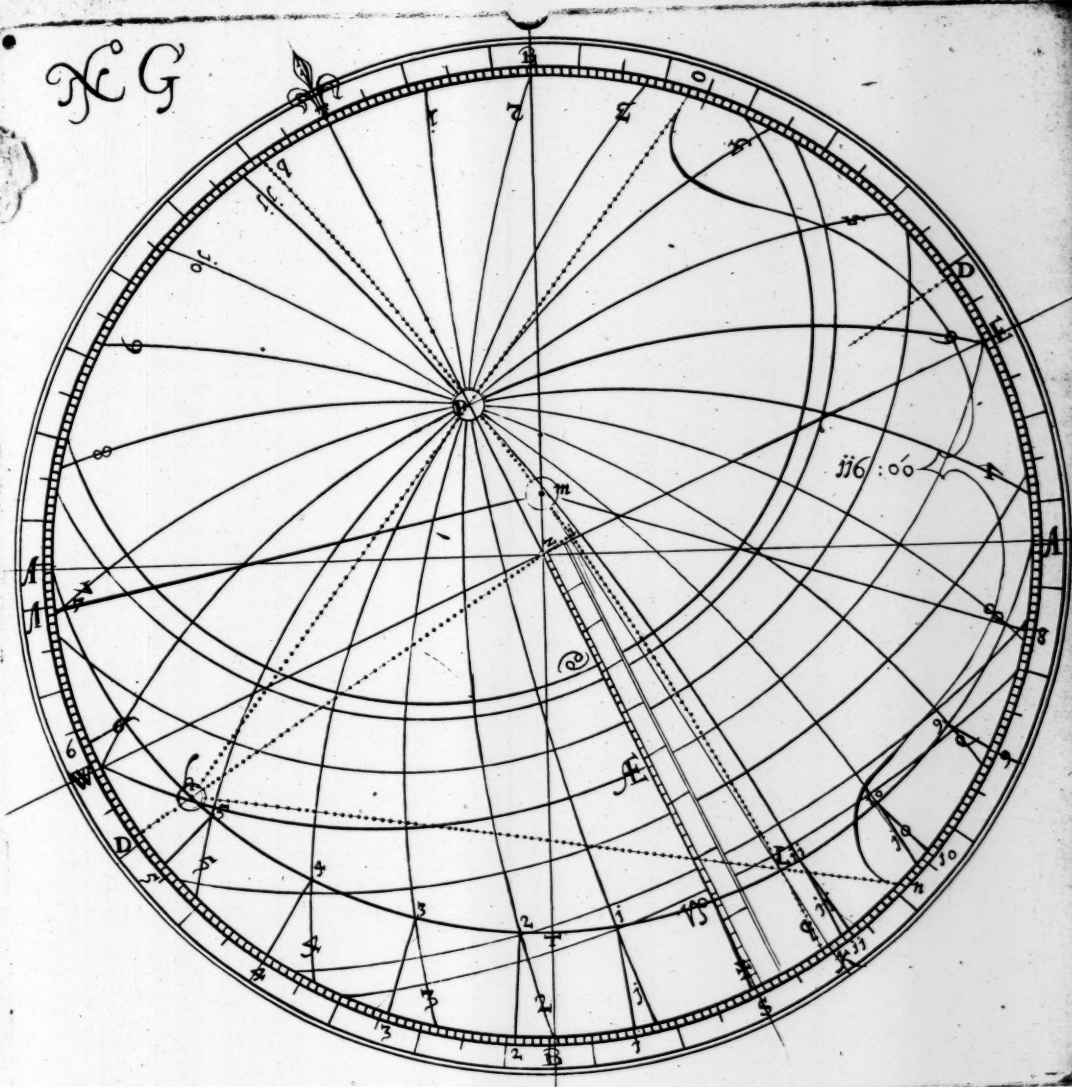


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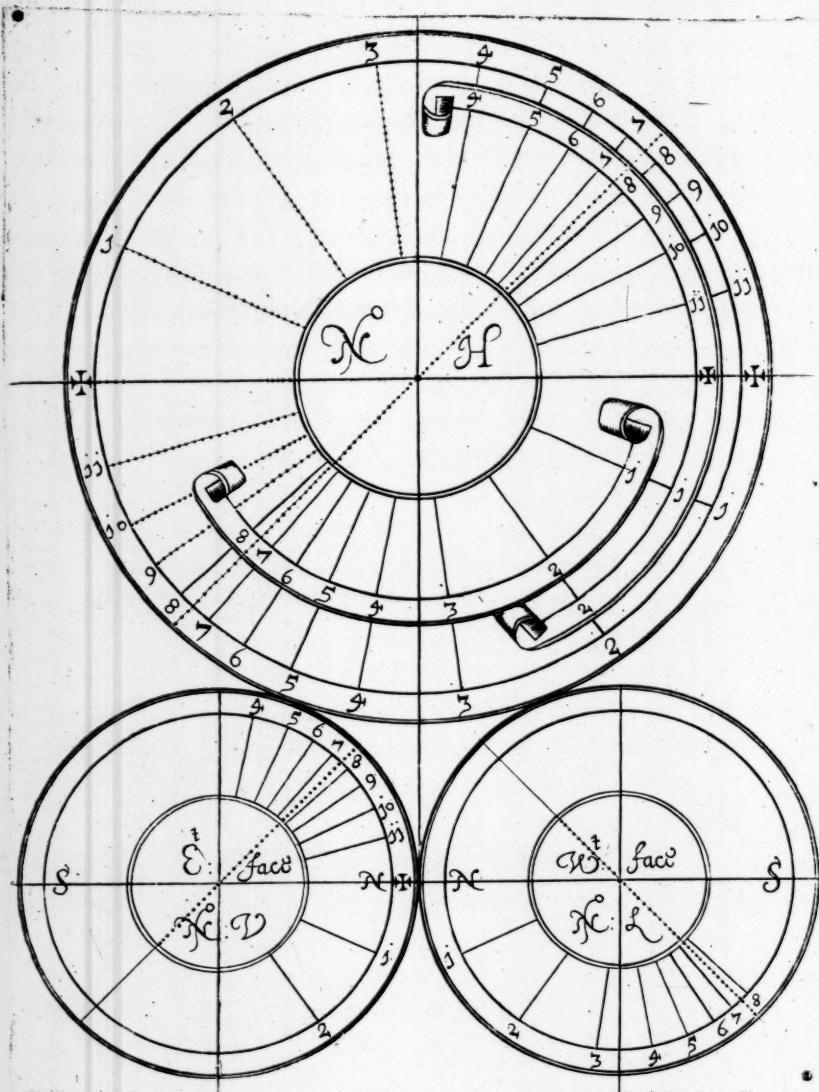




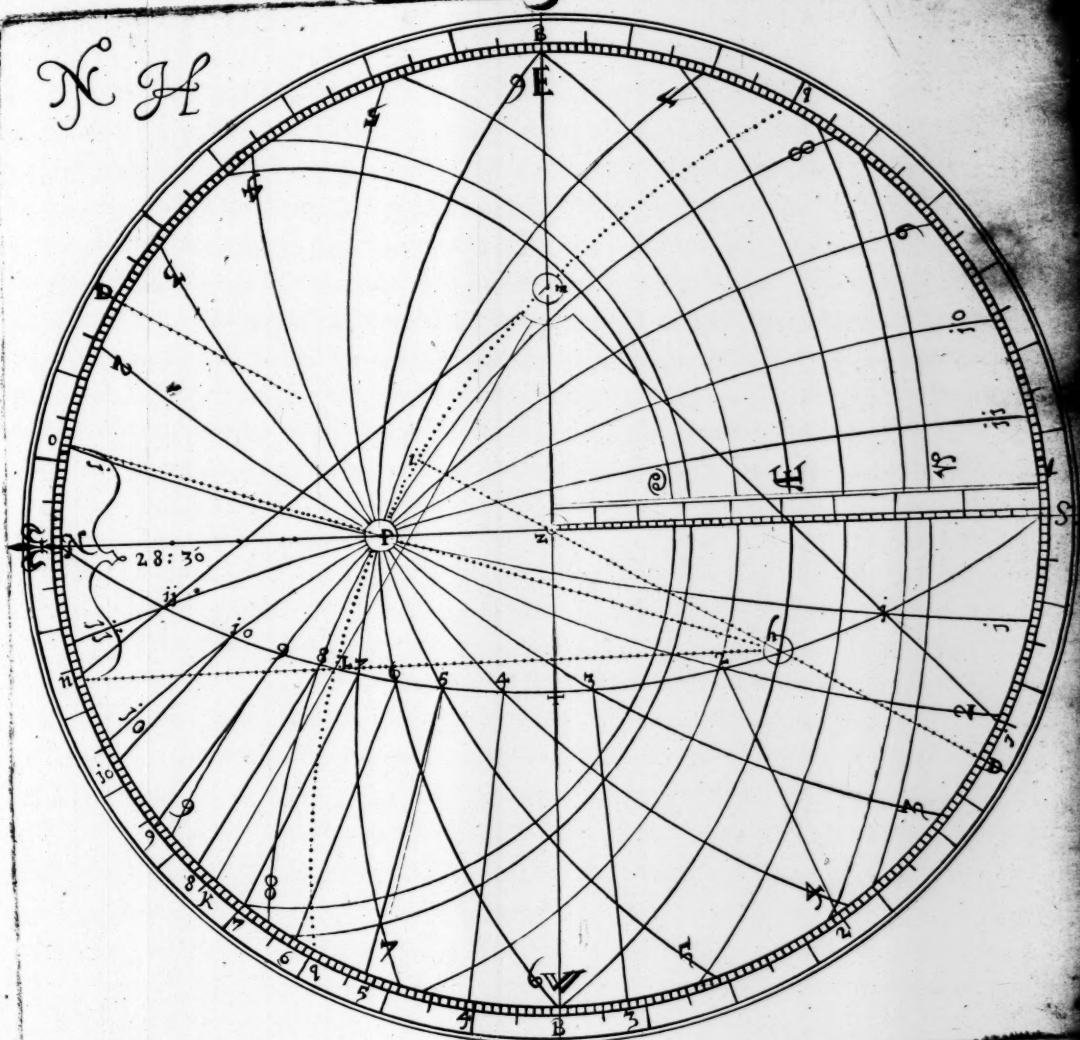
NG



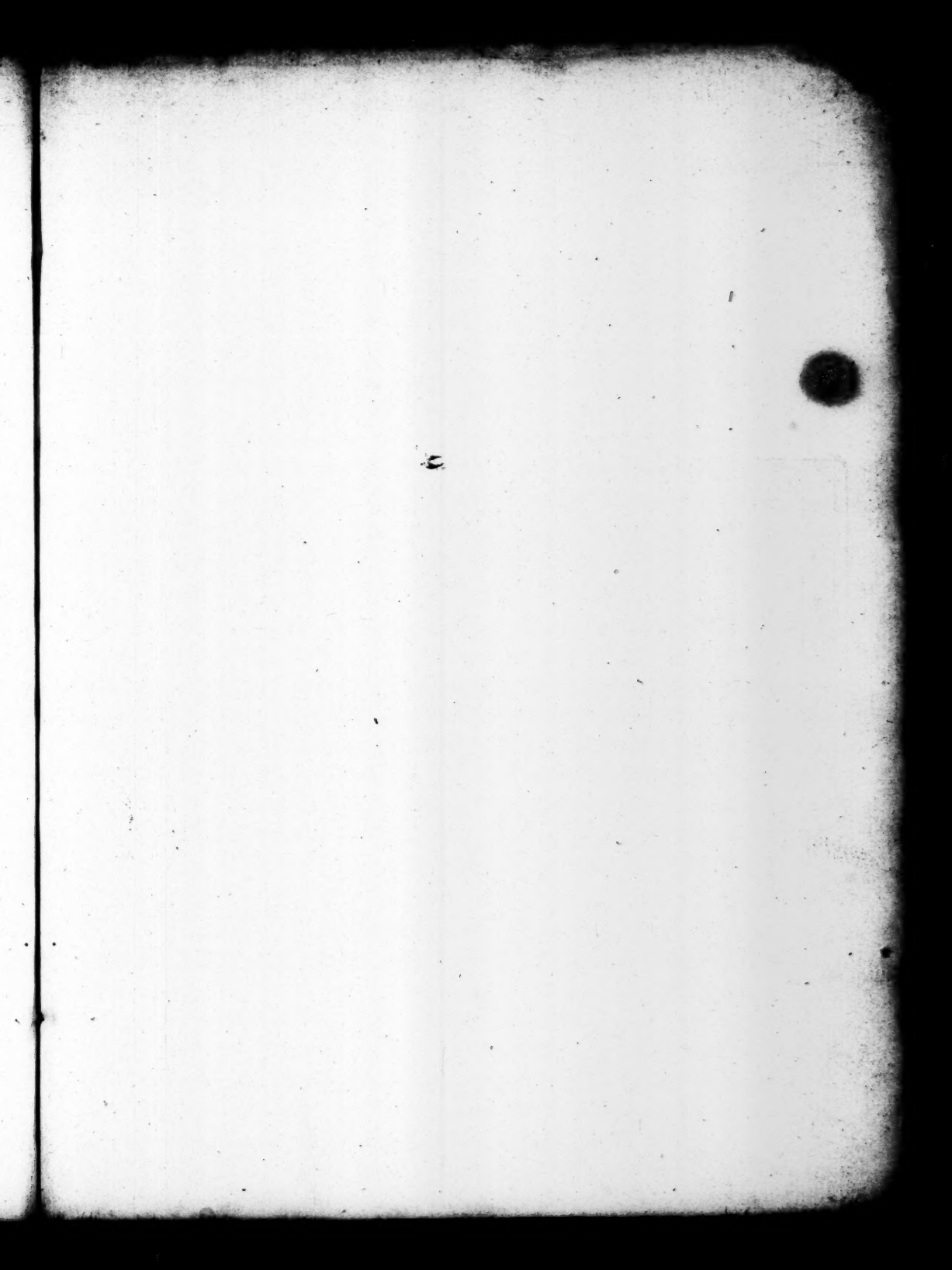


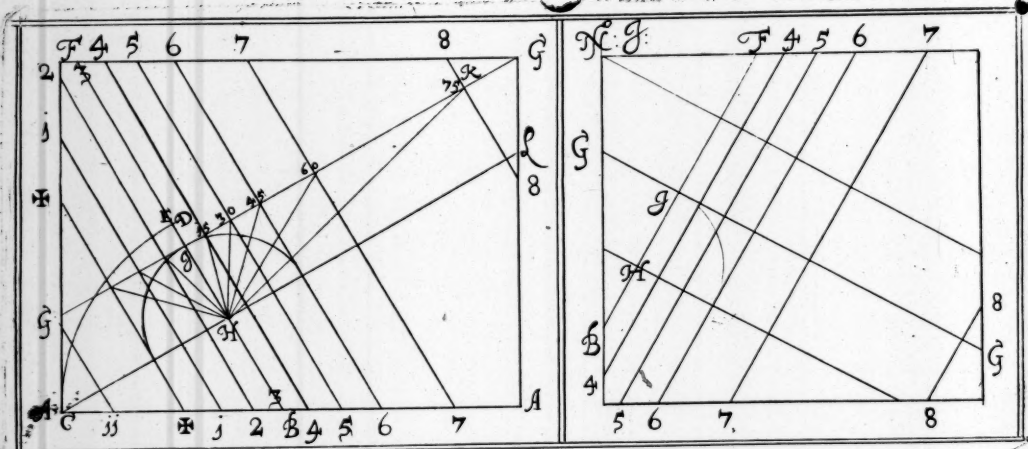


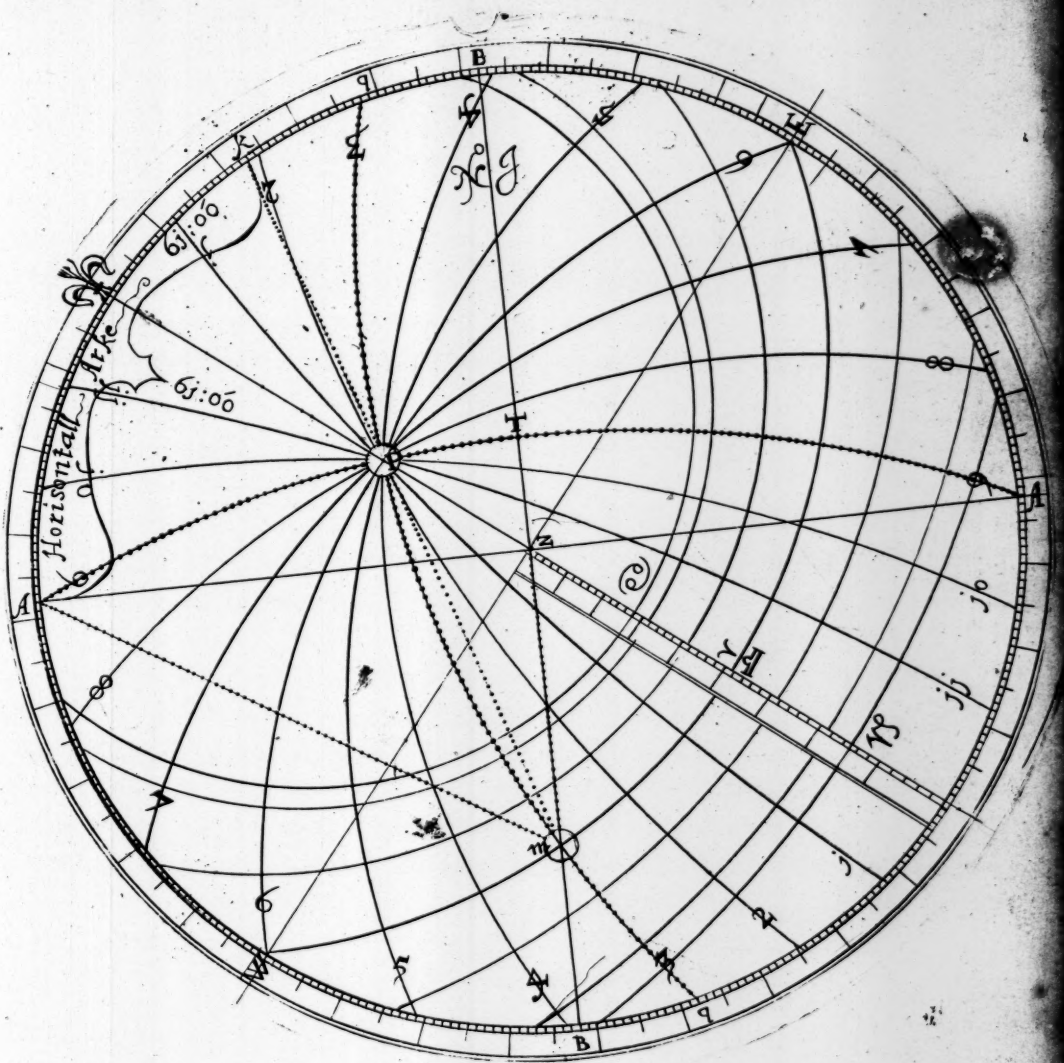
N H



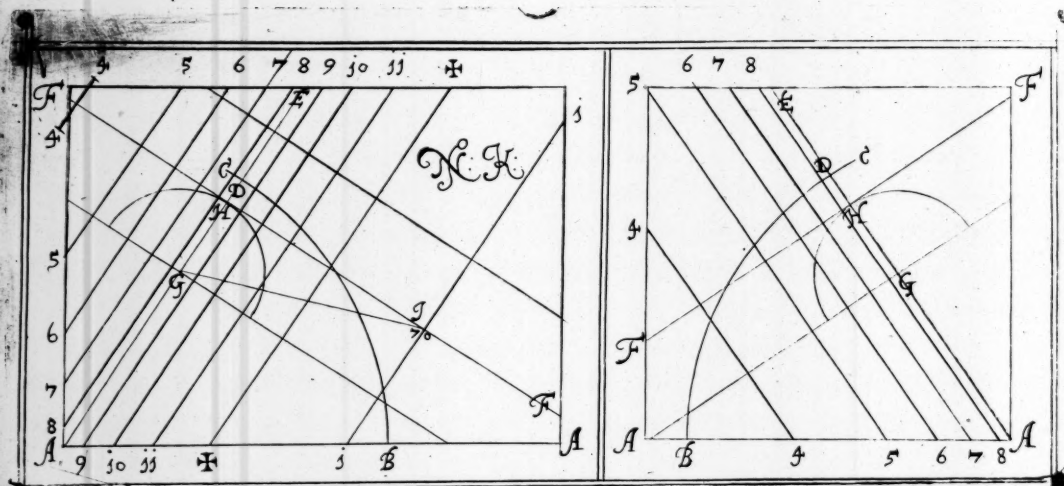


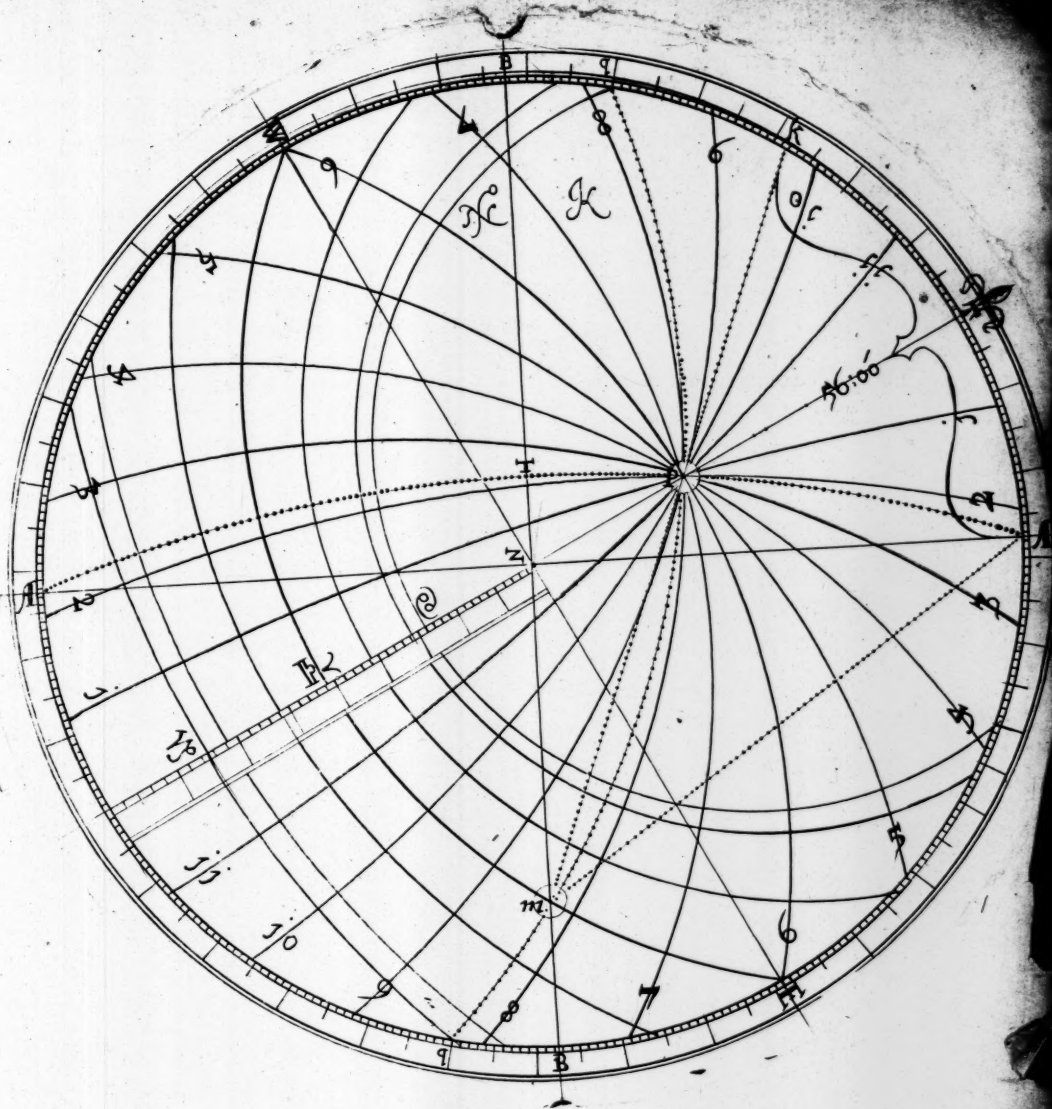














NEW
LAMBETH
FAYRE

NEWLY
CONSECRATED AND
PRESENTED BY THE
POPE HIMSELFE, CARDINALS,
BISHOPS, IESVITS, &c.

VVherein all *Romes Reliques* are set at sale,
With the old *Fayre* Corrected and enlarged, Opening
and Vending the whole Mistry of Iniquity.

By Richard Overton.

VVith remarkable *Annotations* declaring
under what *Pope*, and in what yeare of
our LORD every Relique and
Ceremonie came into the
Church.



LONDON, Printed By R. O. and G. D. 1641.



To the READER.



*His Vessell once hath land'd into the Maine
But being landed, must to Sea againe,
Her decks repair'd, and every place beside
Shee'l venture once more on the falling Tyde
Fraught with more Reliques, then she was before
Such as Romes Conclave long hath kept in store
Ship-splitting Rocks, with scarce tempestious wind
Shee dreads not (READER) if thou be'st but kind
If Boreas storme, and all the Winds beside,
Thy kind acceptance will allay their pride,
be not prejudicate, but if thine eye
Pry out their faults, be pleas'd to passe them by.*

*Thus then, shee ventures, to present her Ware,
And bids you welcome to New Lambeth-Fayre.*

NEW



NEW LAMBETH-FAYRE,

Opening and Vending the whole
Mystery of Iniquitie.



He *Pope of Rome* to heare the great distresse
Of our *Lord Bishops*, and their bad successe
At the late *Fayre of Lambeth*, was perplext,
And at their trading there was highly vext,
That in a fury (posting thence amaine,)
He came to consecrate the *Fayre* againe,

With * *Cardinals* (pufft up with *Roman* pride)
And lofty *Prelats*, and a world beside
Of *Iesuits*, Yea, *Hells* Infernall Gate
Was set wide open, to advance their state,
From whose black sulphurous smoak, there did arise
Legions of Locusts (darkning all the skyes)
Thousand of thousands, *Monks* and *Fryers* store
And *Virgin Nuns*, came to attend the *WHORE*,
'Tis endlesse to expresse, such was the *Traine*
That did presse after with their might and maine :
Such Troops of *Black-coats* came unto this *Fayre*,
Which cast a sable darknesse on the aire,
Which made my *Muse*, to view that ghastly sight,
To be afraid they'd turne the day to Night :
A numerous *Fleet of Ships* were richly fraught,
And all with safety to the *Land* were brought,
With sacred *Reliques*, *Trinkets* long before
Expel'd this *Iland*, now were brought a shore
Which being done; the *Pope* did then prepare
Himselfe, again to consecrate the *Fayre* :

The strange *Seaven headed Beast* pranc'd through the *Town*
A 2. Having

* *Pope Silvester*
the first appoin-
ted the Colledge
of *Cardinals*
Anno, 315.

Pope Marcellus
ordained 16. in
Rome to baptize
converts from
Paganisme, and
for the buriall of
Martyrs.

The Order of
Iesuites was the
Invention of *Iohannes Columbi-
nus* in *Scots* a
City of Hethuria
Anno, 1368.

* The Order
of *Monks* first
raised by *Basil-
ius Magnus* Bi-
shop of *Cesaria*
in *Cappadocea*
Anno, 389.

Having ten *Hornes*, and every *Horne* a *Crowne*,
 And on his back his *Holinesse* he bore
 Which was an *Emblem* of great *Babells* *WHORE*;
 The *Cardinalls*, *Priests*, *Prelats*, and the rest
 Rode in state after (*wondring at the Beast*);
 Who as he rode along did *consecrate*
 The *Fayre* againe to more propitious *Fates*:
 Which being done, and all their *Booths* were made,
 With all things fitting for that holy *Trade*,
 Vpon their *Booths* and *Stalls* for feare of euill,
 Were *Crosses* set to scare away the *Diuell*.
 The *Cryer* then commanded did proclame
 The *Fayre* again, thus in his *Holy Name*.

O-yes-O-yes-O-yes.

(a) Pope Ben-
 net the 2. obtai-
 ned the supre-
 macy of Empe-
 rour Constantine
 and to be Christ
 Vicar, St. Peters
 Successor &c.
 Anno, 667.

The said Em-
 perour gave to
 Pope Siluester
 and his succes-
 sors, Rome, Ita-
 ly, and the West
 parts for St. Pe-
 ters Patrimony
 for ever.

(b) Cardinalls
 were appointed
 by Pope Gregory
 the 10. for the
 election of Popes
 Anno, 1272.

It is decreed, ordered, and this day commanded by the Councell of all the holy Church, first of our most holy Father of Fathers a St. Peters Successor, Christs Vicar, our high Priest, chiefe Pontifex and Pope of Rome, his Cardinalls, Arch-Bishops and Bishops, and of all the Clergie of the Holy Church, that (in the name of his Holinesse, and of the blessed Virgin Mary, and of all the he and she Saints) forthwith this holy and spirituall Fayre (thus consecrated) shall begin, wherein all sorts of saered Ware and Babalonish Reliques shall beset at sale for the ransom- ing of his imprisoned holinesse, William Land Arch-bishop of Canterbury, Primare and Metropolitan of all England, his Grace, with the rest of his sacred Brethren now in durance in the Tower for their most pious papall and Archprelati- call Protestation and Petition, and for the rayeing up supply for their Viaticall expenses with us in our returne to Babilon the Great.

Vivat papa Romanorum
 In secula seculorum, Et ultra.

Amen Amen.

This done the Pope (in height of *Romish* pride)
 With (b) Cardinalls, and all the Troop beside
 Of Hell smoak-vented Locusts shew'd their Ware
 Which they brought with them to New Lambeth Fayre.
 Heer's a rare Head, the Pope cry'd out amaine.
 'Tis stuff with Treasons full as't can containe,
 Come buy this Head, 'tis fild with Noble braines,
 Tak't in your hand, 'll sell't you for small gaines,
 Would'st thou know how to sway the Royall Throne?
 Live like a King, and make a King like none;
 'll sell that Art, good as the Diuell ere made;
 Thou never see a beetter Man of th' Trade,

Buy

Buy *Treasons* of the *Maker*, here are store,
 Vpon my word, I am great *Babels* *Whore* :
 Here's *Powder Plots*, Oh most admired *Ware*,
 They'll blow up *Kings* and *Kingdomes* in the *Ayre*,
 Come hither Sir, are you for *Sea* or *Land* :
 Her's *Plots* for both, will fit you out of hand ;
 How like you 88. Oh such a *Plot*
 Will tame the fury of the cursed *Scot* !
 Her's the late *Fleet*, the *Flemish Butter Box*,
 Saluted lately with so many knocks.

But the best *Plot* that ever yet was found
 Is now on foot upon the *Irish Ground*.
 Oh here is waie will quell your proudest *Foe*,
 And make him swim in blood where ere you goe !
 Take but one *Dram* of this, and it will make
 Both *England*, *Wales* and *Scotland* too to quake,
 'Tis the rar'lt one my *Holineffe* hath brought
 Vnto this *Fayre*, thus to be sold and bought,
 I brought a *Paterne* purpose for this *Land*
 To bring the *Hereticks* to my command,
 Buy't for its vertue, for it hath a power
 To free my *Land*, and set him out 'oth *Towre*,
 Here's *Faux* his *Brain pau*, for a *Quassing Boull*
 To drinke an *Health* in *Treasons* to his soul,
Gowries Conspiracie, or what elle may be
 Fatall to *Kings*, and Triumph unto *Me*,
 Here's *Straffords Witt*, will teach you how to ride
 In *Charles His Waine*, and through the *Stars* beside,
 But like to *Phaeton* too busie with the *Sun*.
 He was throwne out, and so his life was *done*.
 Come hither Sir, doe you desire to be
 Greater then (e) *Kings*, or *Emperours* in degree,
 Make *Kings* your (d) *Slaves*, and *Emperors* kisse your (e) *Toe*,
 And to your *Highbesse* make them barefoot goe ?
 I have that *Art*, no Mortall can compare,
 Or ever bring the like to any *Fayre* :
 Tis better then *Lawn-sleeves*, for this will make
 Not onely *Kings*, but *Kingdomes* too to shake,
 Not many *Kings* surceas'd, I was *supream*
 Here in this *Ile*, but time hath turnd the streame.

(c) Pope Innocent arrogated to himselfe power to crowne and deprive *Emperours*, *Kings* and *Princes* at his pleasure, Anno, 1195.

(d) Pope Alexander the 3. compelled Lewis King of France, and Henry King of England, to his Lackies. Pope Adrian was angry with the *Emperors* for holding the *Stirrop*. Anno 1158.

(e) Pope Leo the first, offered his feet to *Triumphes* to be kisse Anno 850.

But though the thing be something out of date,
Here's *Plots* to boot, which will renew its state,
Come buy this *Gem*, then in small time I hope
You'll prove a *Prelate*, but beware the *Rope*.
Here's ayd for'th *Irish*, to subdue and quell
The *Protestants*, and send them thence to *Hell*:
Oh that curst *Crew*, I have new *Plots* in store
To shed their blood and leave them in their Goare,
Millions of Money I have had ere while
For stratagems invented for this *Ile*,
Well let them thrive, I may ere long I hope
Shew them a trick thus to abuse the *Pope*,
My eldest *Son* sole heire unto my *Powre*
Whom they most falsly have clapt in the *Towre*,
I will redeeme if in this sacred *Fayre*,
I can get money for my popish ware,
He be reveng'd, or else my Triple-crowne
Shall lye at stake, to credit his renowne,
You that affect his sacred holinesse
He sell you plots will free him from distresse,
Come buy them *Tribe of Levi*, for I know
You'd free your *Primate*, if you knew but how,
Come here ye *Dum-Diegos*, view and see
My *Romish Conclave*, come and buy of me,
If you want Treasons or confounding Plots
To conquer *England* and subdue the *Scotts*,
Here buy this plot, and take it on my word,
It is the best the Divells in hell afford,
I have a thousand thousand Divells to bring
Tydings from Nations, and from every King,
How States are sway'd, and how they'r wheeld about,
Some at the court, and some with rable-rout,
That I know when the fittest time will be
To make a commick state a tragadie.

Whereat my muse began to start aside
As one that scarce durst longer there abide
To see such *Sparks* of *Velvet*, as came there
To cheapentreasons; but I will forbear,
To nominate, to whom the Pope did vent
Accursed *Plots* to breake our Parliament:

To see such trading there my Muse resolv'd,
 To try else where what other things were sold,
 And thence departing further she esp'd
 The *Roman Cardinals* in glorious pride,
 Their *Stalls* were so adorn'd with severall kinds
 Of *Babels Trinkets* to content their minds,
 Which made her wonder, wondring did behold
 **Saints* in their blood lye groveling on the mould,
 Their *Shops* and hangings were besmear'd with blood
 Of *Martyr'd soules*, which had their *Lawes* withstood,
 Gazing at this, the next thing that she saw
 Were bleeding hearts, squees'd in a griping paw,
 Dividing aire with hell-breath'd *Dialect*
 In these harsh tearms, Oh now I could disect,
 Thousands of soules, thus peecemale in my spight
 Though their curs'd *Wives* and *Children* were in sight,
 Here are devises for to torture those
 That shall his holnesse or us oppose,
 Our *Spanish Inquisition* if you'l buy
 'Twill fit you for all tortures presently,
 This I brought with me 'cause I heard of late
 Your *High-Commission* is grown out of date,
 Here's a conceit will make both great and small
Nations, and peoples kindreds, tongues and all,
 Bow to your *Marke*, and number of your *Name*
 That none shall buy or sell without the same.
 Then cries another here is *Purgatory*,
Limbo Infantum, Patrum, and the *Story*
 Of *Bell* and *Dragon*, *Tobit* and his *Dogg*
 Come buy these *Trinkets* and away Ile jogg,
 Here's the (f) *Decretals* (g) *Pardons* for the dead
Indulgences the holy *Crosse* and *Bead*,
 The next to him a talvage *Bonner* stood
 Much like the other that was dipt in bloud,
 And he sold fire and faggots to torment
 And burne the *Saints* up all incontinent,
 Another he had got a world of *Spits*
 With *Instruments* to hack them all to bits,
 Another he sold *Hunger Thirst* and cold
 With loathsome *Goales* for such as should be bold,

* Persecution
 for conscience
 came in under
Pope Pelagius
Anno. 553. a
 ter established
 at the great La
 teran Council
Anno. 1215.
 retained in Eng
 land by bloody
 Bishops and
 their Courts
 the year 1644

* Foretold *Re*
 13. first assaid
 by *Boniface* the
 first, granted by
Emperour Phoe
as a Tyrant,
 and *Emperour*
Constantine :
 Obtained by
Pope Boniface the
 2. *Anno. 669.*

(f) *Pope Leo*
 the third, de
 creed that all
 mens judgment
 must be subject
 to the *Popes* de
 crees, *Anno.*
 817.

Nicholas the
 first, that they
 should be c.
 quall with *God*
 Word, *Anno.*
 871.

was decreed
a Council
did at *Lieus*
for *Pope Gre.*
the 10. An-
1271. That
all *Papists* and
others should be
led for ever
by *Priests*, &
more *Pyelats*,
(*Pope Gre.*
the 1. de-
ed *Anthems*.

Pope Damas
added
to the
vice,

(*Pope Peha*
the 1. Or-
and *Funeral*
sings, with
masses of requi-
to be sung
for the dead.
Anno 552.

(*Pope Greg.*
the 1. Ordai-
ed the Office
the *Mass*
Anno 590. Au-
ors of the
Mass, *Gregory*,
Isidore, *Servus*,
Clement, *A-*
lexander, *Pela-*
gius, &c.
Anno 590.

(*Invented*
Alexander
the 1. Anno
590.

(*First com-*
ended by Pope
Gregory Anno
590.

(*Pope Cletus*
owed *Pilgrim-*
ages Anno 81.

(*Oyle and*
nam, brought
by *Pope Cle-*
ment Anno 92.

(*Appoynted*
dying *Pry-*
ests, by *Pope*
Gregory Anno
94.

Once to controule them in their papall sway,
Or dash their glory with an heavenly ray,

But the most hideous gally sight of all
Was a fierce Friend, an other *Cardinall*:
For in his shop with horreur and amaze
Were all the tortures us'd in former dayes,
The ten hot *Persecutions*, in their rage,
And all the rest us'd in this present Age,
Were there at sale, that he appeared to be
More cruell farre then stearn *Tesiphonie*,
Snake hair'd *Megea*, *Alecto* tell,

Are scarce so cruell in th'Infernall Cell,
Sometimes his shop was filld with sulphuric smoak,
One would have thought his chapmen would've choakt
Then presently the fire and faggot blaz'd
Which made my muse affrighted stand amaz'd,
To see such Millions frying in the fire
While this stearn *Tyrant* gnash't his teeth with *Ire*,
The *Skins* of Saints, their *Tongues*, their eyes, and eares
Were there at sale with floods of brinish teares.

Wearry of this, my Muse display'd her Wing
And soaring higher heard the welkin Ring,
With various voyces chattering in the Ayre,
To sell their *Trinkets* in new *Lambeth-Payre*:
Bald-pated *Eryers*, with th'Infernall *Train*
Of *Romish* Vermin cri'd with might and maine,
Their severall *Trinkets*, * *Priests* and all the rest
Of *Hell*-sent *Loensts*, that came with the *Beast*,
Cald to their chap-men, swearing by the *Mass*
Their ware was such as through the World might passe,
(*k*) *Anthems* and (*l*) *Hymnes*, and (*m*) *Dirges* for the dead,
The (*n*) *Latin Masse* with the *Incarnate Bread*,
Bell Book and *Candle*, to accurse all evill,
And (*o*) *Holy water* to affright the *Devill*,
Divine (*p*) *Procession*, holy (*q*) *Pilgrimage*
All sorts of *Whimies*, fit for every age,
Fresh *Avie* *Maries* from the holy function,
Cream, (*r*) *Salt*, and *Spittle*, with the (*s*) sacred *Vnction*,
Orders for (*t*) *Priests*, (*u*) *Monks*, (*w*) *Friers*, and the nest
Of *Abbie Lubbers*, *Priors*, and the rest,

The

The *shirt of haire*, the *xx* *Pennance* and the *(y)* *Crosse*,
Prayers unto Saints, and such like popish drossie,
Shroving of women, with such pritty knacks,
 To calculate the *Stars* upon their backs,
Morning Orisons, prostrate on their beds,
 And *(x)* *Virgin Nuns* cri'd out their *Maiden-heads*:
Omne Venale others cry and call
 Here's *Money Pardons* to forgive you all,
 You that are *Blades*, and doe desire to roare,
 Here's *Dispensations* for to wench and w hore,
 Here's *earnall Merits*, *Rites*, and *Innovations*,
 And *Ceremonies*, for all kind of *Nations*.
(a) *Vitalian* Cri'd with *Organs* on his back
 Iust fidler like, what Musick doe you lack,
 And dancing after, *(b)* *Guido* gan to play,
 And quaver'd out, *Vt, Re, My, Fa, Sol, La*,
 Lay out your money, others cry 'tis drossie
 Here's *(d)* *Paschall Tapers*, *(e)* *creeplings to the crosse*,
(f) *Temales* for soules departed, *(g)* *sacred Palmes*,
(h) *Hermits* *aparell*, consecrated *Almes*,
 Here's *(i)* holy fire for *Easters Eve* to heat
 Your stomachs to concoct your *Sunday's* meat,
(k) *Church Consecrations*, *Ornaments of gold*,
 And hallow'd *Golgotha's* *(l)* *Calixtus* sold,
Collects and *Responds* *(m)* *Gregory* calls aloud:
 And *(n)* *Sabian* with his *Bells* ran through the croud,
 Iejune *(o)* *Telesphorus* *Iack-a-lent* did bring
 (Brought hither first by *Carcombertus* King.)
 Then presently *Pope Ioan* cries as she rides,
 My back, my back, my belly and both my sides,
 And in a fury cals (as she were wild)
 Come hither friends, and buy this holy *Child*,
 And *Innocent* to wash of *Adams* sinn,
 Brought *holy water* to **baptize* it in.
Synods and *Counsell*s, others came to vent,
 The *Lateran*, *Nicene*, *Bracharence*, and *Trent*,
 The *Orleans*, *Lyons*: endlesse is the kind
 Of various *Reliques* that are yet behind,
 All there at sale: But in the very pride
 Of this *New Faire*, my prying Muse espi'd

1) *Pope Anselm*
 was ordained
 Priest for ever
 Town, village
 Anno 101.
 (u) First *M*
 kish Order beg
 under *Pope S*
 cius, first rai
 by *Basilus* m
 nus Bishop of
 sayen in Capp
 docea. Anno. 3
 (w) *Pope inn*
 ermt. 3. in the
 Tears of his
 pacy ordaine
 Fryers, there
 nine severall
 ders of them.
 (x) *Pennance*
 was invented
 Pope *Nicho*
 the first.
 (y) *Crosse*
 Baptisme first
 commanded b
 Pope *Clement*
 Anno. 92.
 (z) *Pope Iohn*
 the first raised
 up the Order o
 Nuns.
 (a) *Pope Vira*
 an first broug
 in Organs int
 the Church, A
 653.
 (b) *Guido A*
 sinus the first
 devised these
 notes.
 (d) *Pope Zo*
 nus ordained
 the *Paschall* T
 pers to be H
 lowed, Anno
 414.
 (e) *Pope Greg*
 ry the first
 brought
 creeplings to the
 Crosse into the
 Church.
 (f) By *Grego*
 (g) *Ibid.*
 (h) The first

An ugly *Owle* came fluttering through the aire
On purpose sure to view their popish ware,
Much like that schreching broadfac'd Bird of night
Whose three dayes daring presence did affright,
Romes mighty Senate, that they durst not stay;
But thought it was the Divell, and ran away.

Even to this *Owle* (pearch'd on the top of all.
The sacred *Crosse* fixt on the *Pope* his stall;
Which when they saw somegan to hooote, and fling
Their *Crozier Staffes*, to make her take the wings;
But this bold *Bird* of darknesse would not rise
Doe what they could, but staring with her eyes,
Out-fac'd them all, which presently amaz'd
The *Pope* himsele, who thought the Divell had gaz'd;
That in affright they pack'd up all their *Ware*,
For *Rome* againe, and left *New Lambeth Faire*.

But our more bolder *Bishops* not affraid,
Of *Owles*, nor *Divells*, were nothing dismay'd,
But with undanted Courage all amaine,
Came to this *Fayre* thus consecrate againe,
The *Clerke* of th' *Fayre* was presently bespoken,
To give them liberty their *Stalls* to open:
Proclaim't againe, the *Bishops* all they cry'd,
Wee'll try if we can longer here abide:

The *Clerke* gave leave, the *Cryer* on a Hill
Standing, began to cry with voyce so shrill.

O yes, O yes, I doe cry,
The *Bishops* Trinckets who will buy?

This being done of *Bishops* all the Crew,
Began with speed, their wearing Robes to shew,
And with extended voyce, they all did cry,
Come Customers, see what you lack and buy;
Here's (*b*) Vestments Consecrate, all sorts and sizes,
You may have here, if you'll come to the prizes:
Buy *Fayrings* for your Children, herr are toyes,
Fit for your purpose, be they Gerls, or Boyes;
Caps for your Boyes, to hurle into the aire,
And *Beads* for Gerles, are here in *Lambeth Fayre*:

What

What though these Robes were first deriv'd in Hell,
 Tush thats no matter, we'll good pen-worths sell:
 Here look upon them, they are good and strong,
 They'r neate and handfom, and will last you long,
 They'r very full and large, you nere saw stronger;
 I would not sell them durst I keepe them longer.
 Buy a *Crucifix*, another loud doth call,
 'Twill scare the *Devill*, and will preserve your soule;
 Lay out your money, hang up worldly Pelfe,
 I will sel't cheaper, then I had't my selfe:
 It's strange to se how men their money keepe,
 What come you all to *Lambeth-Fayre* to sleepe;
 Come buy *Lawn sleeves* I have no money took,
 Here try them on, you'l like a *Bishop* looke:
 And may get honour both of great and small;
 And Lord it ore your fellow Brethren all:
 If that the times should chance once more to turne,
 Then might you Lord it, like as we have done,
 Come hither Friend, and buy this silken Gowne,
 I'm sure you cannot match't in *Lambeth Towne*:
 In this same Gowne, did *Canterburies Grace*,
 At *High-Commission* shew his gracelesse face;
 Many a storme, and shower it will abide,
 Yea, and a world of knaverie it will hide;
 Sir, looke upon't, and view it at your leisure,
 Goe to the price, for you I faine would pleasure,
 Come buy his *Grases Gowne*, the price is small,
 And if you will I'll sell you grace and all.
 Though he have worn't, it's neere the worse for wearing,
 Girt it but close and never feare the tearing.

Come buy my *Crozier staffe*, another he begins,
 Tis excellent to keepe Dogs from your shins:
 Pray Sir let me some of your money take,
 And keepe this staffe for its old masters sake.

Another comes as if his back would breake,
 Burthen'd with *Vestures*, and gan thus to speake,
Trinckets I have good store, within my packe,
 I pray you view them, and tee what you lack;
 See for your love, and for your Money buy,
 Name what you want, I'll fit you presently,

66. *Bishops*
 dained they
 should remaine
 without delay.
 About 300.
 yeares after th
 Apollis is b
 came more ge
 rall. Cassan
 in lib. de Inf
 Rap. It was
 tify'd and con
 firm'd by pop
 Innocent 3.
 the second B
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 sell, Anno 610
 Decreed like
 wise at the 5.
 Carthage Cou
 sell remained
 continued till
 England; mo
 the pity.
 Pope Eugenius
 creed Godfath
 and God-mo-
 thers An. 1.
 (o) Pope Ste
 ven the first
 creed that a
 Priest in time
 divine servic
 should use ne
 ther but Hal
 lowed garme
 Anno 261.
 (p) First
 brought into
 England by
 sin the Mon
 sent by Pope
 gory the first
 preach the do
 ctrine of Ro
 with all thei
 Superstitions
 and Tradition
 first entertain
 at Canterbury
 Ann. 590.

My packe it is a *Wardrope* large and faire,
 Wherein are *Misers*, *Caps* rotund and square,
 The rar'st *Episcopalls*, that ere you see,
 Are in my pack, come pray you buy of me ;
 Here's rich Embreydred ware, chuse where you please,
 I have a thousand such like knacks as these :
 Buy this brave *Rochet*, buy this curious *Cope*,
 The tipper, Scarfe, they all came from the (r) *Pope*;
 'He sell them at a rate you cannot loose,
 Or else exchange them for a pair of shoofe ;
 I must to *Rome*, I can no longer stay,
 I pray you buy them, I must hence away.

Then after that unto this jolly *Fayre*,
 A little *Wren*, came flying through the ayre,
 And on his back betwixt his wings he bore,
 A minster stuff, with *Crosses*, (s) *Altars* store :
 With sacred (t) *Fonts*, and rare guilt *Cherubims*,
 And bellowing *Organs* chanting curious *Hymnes*;
 The hallow'd Host, dum *Priests* and singing *boyes*,
 With Antick Cringers, and a thousand toyes:
 Thus then this mighty *Wren*, unto the *Fayre*,
 Brought his *Cathedrall* pack, thus stuff with ware,
 The door's wide-op'n, there thousands came to see,
 The *Romish* Reliques of the Hierarchie;
 Where all were set to sale, and at low rate,
 Because they gan to wax quite out of date :
 Buy my high *Altars*, he lifts up his voice,
 All sorts of *Masse Bookes*, here you may have choice ;
 Here's (u) bells baptiz'd, will make a dainty sound,
 Pray if you please step in and ring them round :
 Then after that were scene a *Regiment*,
 Of *Hell-borne Locusts* from *Cocitus* sent,
 To draw a mighty Cart wherein were brought,
 (x) *Plurality* of Churches to be bought :
 Then came another if he had beene there,
 Would scar'd the *Devills* from th' *Infernull Spheare*.
 For store of *Crosses* on his back he bore,
Charin, and *Cheap-side* and a thousand more,
 And cri'd what though they be condemn'd of *Treason*?
 Come buy them quickly while they are in season :

Then

Priests appar-
 ted by
 Zachary,
 anno 752.

Pope Sixtus
 2. first or-
 ned Altars.
 Pins the
 brought in
 anno 752.

mirandus factus
 as the sound of
 his cause rem-
 ts, thundring,
 lightnings,
 and, wicked
 vits, and Di-
 ls to cease.
 Plurality of
 pacifices was
 condemned at a
 sunfell, held
 Lyons by
 o. Bishops, and
 1000. Prelates,
 anno 1271.
 notwithstanding
 continued in
 England till the
 year 1642.

Then cri'd an other, Sir, what will you buy?
 I pray step in Sir, do not so passe by.
 Here's a *Cathedra*, once *Saint Peters chaire*,
 The rarest thing to buy in *Lambeth-fayre*,
 The candid (w) Surplesse with the *Wedding Ringes*:
 Pictures for Bibles, and such pretty things:
 Here's the late (x) *Canons*, and the new found *Oath*:
 To sell *Et cetera* I am very loath:
 You formerly have heard by true Relation
 These are the toyes wee made i'th' *convocation*:
Oath ex Officio, here if you will buy:
 Or (y) *High commission*, take it presently.
 Here's (x) *Ember weekes* with thin-chapt *Jack-a-lent*,
 To helpe you at a pinch when all is spent:
 Here's (a) *Holy Dayes* to sport the time away:
 Or Booke of Pastimes for the *Sabbath Day*:
 Here's *Deanes* and *Prebends* and the filthy Nest
 Of *Pursevants*, *Promoters*, and the rest,
Chancelours, *Officialls*, *Surrogates*, and all
 The lofty *Courtiers* of *Commission Hall*.

Come *Clergy* Chapmen, to your *Hierarchie*,
 Here's excellent ware, as good as ere you see;
Iure Divino, that is become our Doome,
 Wee'l sell't for Warfage to the Coast of *Room*,
Burials, and *Churshings*, we have wondrous store,
 Vpon my word, they all came from the *VVhere*;
 Then next to him, a fiery fat guts fell,
 Brought six and twenty *Bishopricks* to sell:
 With gags and whips, and Prisons for all those
 That shoud their curled *Hierarchie* oppose,
 With catch him *Pursevant*, take him to the *Layle*,
 There let him lye without *Mainprise* or *Baile*,
 'Ere he get from us, wee will make him see
 Experimentally, we *Bishops* bee;
 Our Courts and *Iurisdictions* are at sale:
 Come buy them quickly, 'ere they be too stale.

An other *Bishop*, with a *Bar* did ride,
 And with extended voyce he loudly cri'd,
 To Schollars all that *Ministers* would be,
 Come hither, buy the *Holy Ghost* of me;

(w) under Pope
 Adrian at a Syn-
 nod at Franck-
 ford; 796.

(x) Made by
 the Convocat.
 in England Anno
 1640.

(y) Put down in
 England, Anno
 1641.

((z) Calixtus
 ordained them
 4. times in the
 yeare Anno
 108.

(a) brought in
 by severall Popes.
 Easter day by
 Pope Pius I.
 Anno 147.

Midsummer day
 by Silvester I.
 Anno 315.

Fasts of All
 Saints by Boni-
 face, 4. Anno
 606. Candle-
 mas, by Pope
 Swineclout, An-
 684.

But *Simon Magnus* he was in the ground,
And none to buy the *Holy Ghost* was found.

Another *Bishop* lifting up his voyce,
Cri'd out amaine, of Livings I have choise,
I'll sell you two or th'ee, if that you please,
So you'll have money comming in with ease,
If that to Preach your selfe you can't indure,
Get some poore *Journey-man* to serve your *Cure*;
You'll quickly light on such a one I trow,
We have made more, then how to live doe know,

Brought into the
Church by Gre.
gory 1. Anno
599

Wax(d) Candells; Tapors, another cries and calls,
These brought I with me from *Cathedrall Paules*,
They'll scare the Divell, and put him unto flight,
When he perceives a consecrated light;
When we at *Mattens*, and at *Even-song* were,
We had them by us then, devoyde of teare;
They'll bring delight unto your eyes and nose,
They burne so cleere and smell so like a Rose,
Or else you may on whom you will bestow it,
They'll joy to thinke a *Bishop* once did owe it.

Come hither Friend, another loud doth call,
I'll sell you here my *Common-Prayer-Bookes* all,
Sir view this same, and take it in your hand,
This *Booke* but lately no man durst withstand,
For if he did, and wee thereof did heare,
Wee forthwith made him a Commissioner,
And if he chan'd appearance for to misse,
To *Limbo Patrum* he was sent for this:
And if he did not us some mony give,
In that *Abyss* we doom'd him still to live.
Money my hearts another loud doth call;
I see I am not now in Lambeth Hall,
No sooner I from Dinner then was risen,
Men brought me chinke to free them out of Prison.

I'm broake, I'm broake, another then did say,
Come buy my Hoods, I can no longer stay:
What meane you Sirs? the day is almost spent,
Come buy my Trinkets all incontinent:
Come hither friend, the price is very small,
He sell my *Coate*, it is Canonically;

Come

Come buy this *Miter* Sir, if you be able,
The vertue of it is inestimable,
Buy't Sir, and weare it, and then soon I hope,
You will rise higher and become a *Pope*;
I tell you true I had not fortune left me
I would have kept it untill Death bereft me,

An other *Bishop* he a Pack brought in,
The which was stufte with *Licences* toth'brim,
And presently he cryeth out with fury,
Here's *Licences* to Preach, to Church and bury:
If Wedding's out and you'r dispos'd to Wed,
Come buy a *Licence* and away to Bed.

It now beginning to grow towards night,
Comes a grave *Doctor* running in with might,
His courage stout was something now abated,
He brings his golden *Slippers*, consecrated,
And crys, come buy these *Slippers* here of mine,
They are emboss'd with *Holmes Divine*;
They will in all your wayes preserve you sound,
And with them you may tread on holy Ground,
They'r fill'd with *Holmesse* within, and round about,
Here looke upon them, see how't breaketh out.

What all passe by? 'tis strange time turns her wheell,
And bends her bow upon us, that we feell,
No *handfaile* yet, our *ware* is becharmed sure,
And (like our selves) there's none will it indure,
It's doom'd to dismall fate, despis'd and scorn'd,
Though nev'r so costly, or so much adorn'd;
Here's *omne venale*, yet no money flies,
Our *Ware*'s dog-cheape, and thus our credit dies:
For such a *Fayre* I never did behold,
We bring our *Ware*, but nothing can be sold:
I wonder said one, what was our intent,
To make our *Fayre* thus at the *Parliament*:
For we are mocked here by sawey Jacks,
They bid the *Pedlers* to put up their *Packs*:
We thought our *ware* would fould at such a price,
And of our hands been vented in a trice,
That this last Act upon the *English Stage*
Would forde money for our *Pilgrimage*
To *Babylon the Great*: How'ere we dream'd no lesse
Than *Banister* for his *pricke* and *hedge*

*Marriage made
a Church action
by Evaristus.*

But he, nor we, must in this *Lambeth Faire*
Get helpe I see by this our *Papish Wars*.

Whilst thus the *Bishops* there, their *guns*, and they,
Cald to their *Customers* to come away;

A *Messenger* came running through the croud,
And to the *Bishops* thus he spake aloud,

Away to *Rome* or *Tiburne* chuse you whether,
I know your shooes are made of running leather:

For all the *Lawes* oth' Land, you have out-run,
And I come here to tell you what is done,

The *Parliament* hath callt you from their *Sphere*,
For dire *Aspects* that yee have caused there,

Ye are devoted and from thence are hurl'd
And lie like *Starrs* shot on the lower world;

Your ware's not worth a fart for all your cogging,
See where the Hangman comes away, be jogging;

Then comes young *Gregory* with an Hempen Broome,
To sweep these Vermin to the Sea of *Rome*;

A Broome said I, my tongue it surely falters,
'Twas *Tiburne* hung with six and twentie Halters.

Which fear'd them all to see that hard mishap,
They'd rather ten times seen a *Comerd Cap*.

With that the *Bishops* cri'd we are undone,
we are so fat, alas we cannot run.

But unto them a lustie Porter struts,

Sirs here's a *Basket* that will hold your Guts;

Take my advise, (the knave hath Halters plentie)

You'll run the better when your bellie's emptie.

Alas cry'd they, is all our labour losse?

Others get money, we have but the *Crosse*!

For we are crossed in our expedition,

And flie we must, for all our late *Petition*,

Yet notwithstanding herein lies our hope.

We shall be entertained by the *Pope*.

With that like men of *Senes* quite bereft,

They troid away and all their trinkets left,

A friend of mine to me did then repara,

Desiring me, to pen this famous *Fayr*,

Which I have done, and have it here to sell;

Come buy the *Fayrs* of me, and so farewell.

FINIS.

